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SOUTH DAKOTA
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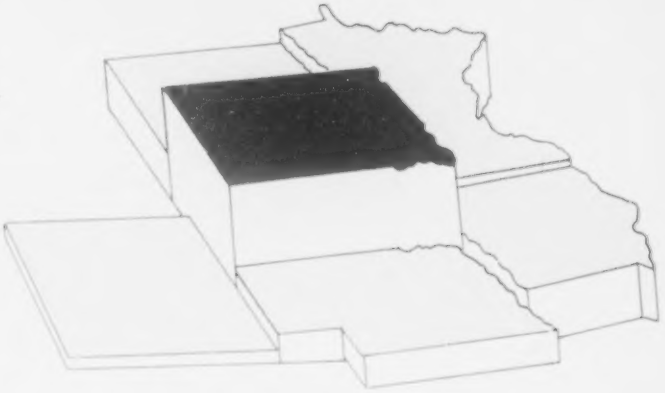

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General Indicators	SOUTH DAKOTA Latest Quarter	SOUTH DAKOTA Latest Quarter	SOUTH DAKOTA Year Ago	SOUTH DAKOTA Percent Change	UNITED STATES Latest Quarter	UNITED STATES Year Ago	UNITED STATES Percent Change
Personal Income ($ Mil.)	1988-2	9,031	8,810	2.5	4,003,548	3,721,716	7.6
Farm Prop. Income ($ Mil.)	1988-2	685	908	-24.6	40,988	40,763	0.6
Non-ag Employment (Thous.)	1988-3	262	257	1.9	106,469	102,669	3.7
Unemployment Rate (%)	1988-3	3.7	3.5	5.7	5.4	5.9	-8.5
Total Employment (Thous.)	1988-3	349	349	0.0	116,425	114,069	2.1

Note: All U.S. data seasonally adjusted except for the unemployment rate and total employment. For South Dakota only personal income and farm proprietors' income are seasonally adjusted.

SOUTH DAKOTA SHEEP
A Perspective

By Charles Roegiers and Sandy Weeldreyer

There is an important industry in South Dakota which is normally overlooked by the state's residents and visitors. That industry employs more than 5,400 people and averages $34 million in gross income annually. South Dakota ranks 5th of the 50 states in the business of raising sheep. Its farmers and ranchers produced and marketed 492,000 head of sheep and lambs in 1987. Realizing a cash income of $44,582,000, one can safely say that sheepmen and women contribute substantially to the economic health of South Dakota.

Continued on page 4.

About the Authors: Charles L. Roegiers, Ph.D., is Professor of Management at the School of Business, The University of South Dakota. Sandy Weeldreyer is a Graduate Assistant at the School of Business, The University of South Dakota in Vermillion.

A MARKET RESEARCH PRIMER, PART II

By Steven W. Pharr

Part I of this article appeared in the September 1988 issue of the South Dakota Business Review. Following is the conclusion of this article.

THE ROLE OF PURCHASER AND SUPPLIER

The entire arrangement surrounding the market research contract should be mutually beneficial for all parties involved. In order for it to be mutually beneficial, both the purchaser and supplier must recognize and fulfill their respective roles in the process. It is not a case where the purchaser informs the supplier of the problem and then waits for an answer while the supplier executes the entire research

Continued on page 6.

About the Author:
Steven W. Pharr, Ph.D., is Assistant Professor of Marketing at the School of Business, The University of South Dakota in Vermillion.

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TREND OF BUSINESS

The United States Economy

The growth of real Gross National Product (GNP) slowed to an annualized rate of 2.2 percent from the second to the third quarter of 1988. Increases in the first and second quarters were 3.4 and 3.0 percent. Real GNP growth for January to September 1988 is 4.2 percent above the growth rates for the same time period last year. Officials at the Federal Reserve believe that any economic growth beyond 2.5 percent may be inflationary, given the nation's current labor and factory utilization rates. Inflation as measured by the Consumer Price Index (CPI) increased at an annualized rate of 4.8 percent from the second to the third quarters. The CPI's lowest growth rate for the year thus far has been in the first quarter when it grew at an annualized rate of 3.2 percent.

The nation's unemployment rate fell one-half of one percentage point from the third quarter of 1987 to 1988, putting it at 5.4 percent of the civilian labor force. Total employment continued to increase in the third quarter at a rate of 2.1 percent over the same quarter in 1987. Non-agricultural employment also increased 3.7 percent from the previous year.

Personal income continued to rise in the U.S. in the second quarter of 1988, increasing 7.6 percent over the same period one year ago. Nationally, farm proprietors' income edged up .6 percent from the second quarter of 1987. Data from the third quarter of 1988 indicates that real personal consumption expenditures rose 3.5 percent over the previous quarter and 2.2 percent over the same quarter in 1987. The U.S. Department of Commerce recently hiked its estimate of national retail sales for the month of October to a 1.6 percent increase over September sales. Preliminary estimates for sales in November are a seasonally adjusted $138.1 billion, up 1.1 percent over October's transactions.

South Dakota's Economy

After reaching its lowest point in eight years, the state's seasonally adjusted unemployment rate jumped eight-tenths of one percent from the second to the third quarter of 1988. At a rate of 4.3 percent, unemployment for the third quarter of 1988 is just under the 4.4 percent rate for the same quarter a year ago. Although there was no change from the second to the third quarters, seasonally adjusted non-agricultural employment is still 2 percent above the same time period one year ago. Employment levels in the construction industry

Continued on page 12.

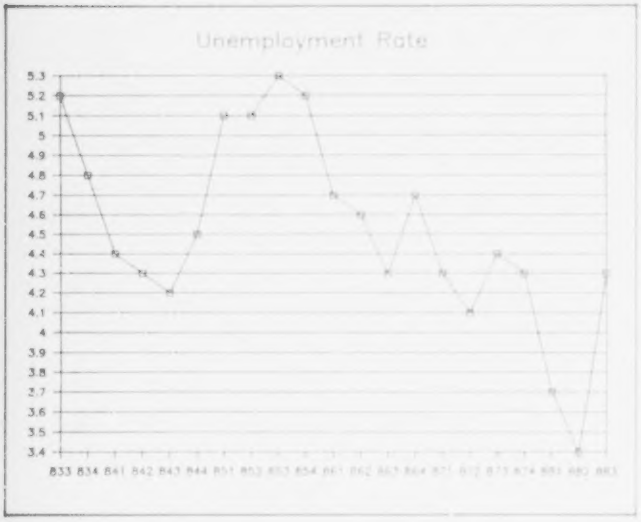
South Dakota Business Indices
1987-1988
Seasonally Adjusted (1982=100)

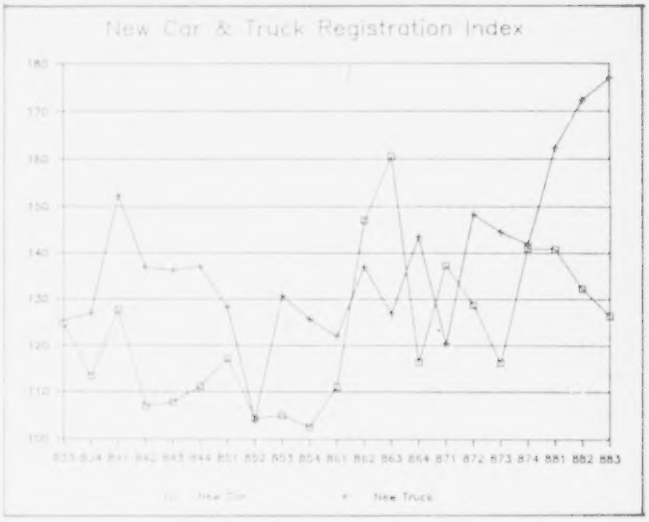
	1987			1988		
	2nd qtr	3rd qtr	4th qtr	1st qtr	2nd qtr	3rd qtr
Personal Income	113.0	109.9	117.7	115.1	110.8	---
Farm Proprietors' Income	188.5	130.8	236.2	211.8	135.9	---
Non-ag Employment	121.5	121.1	122.0	109.2	113.7	113.7
Const Employment	125.7	123.4	130.2	129.4	131.7	131.0
Unemployment Rate (%)	4.1	4.4	4.3	3.7	3.4	4.3
New Cars	126.8	116.3	141.0	140.8	132.3	126.4
New Trucks	148.4	144.6	142.0	162.4	172.3	177.0

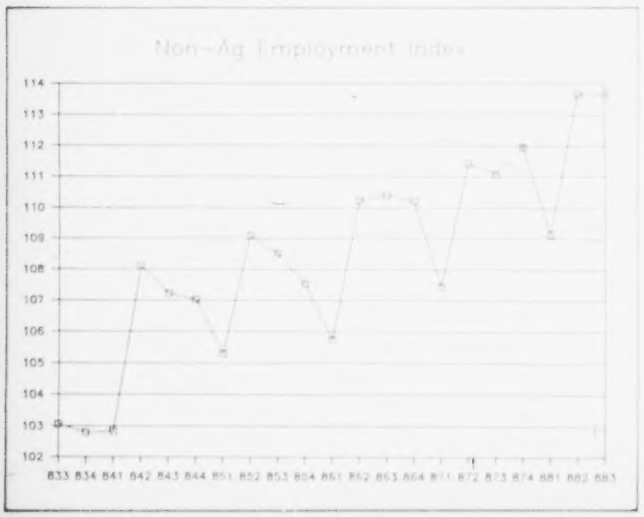
SOUTH DAKOTA BUSINESS & ECONOMIC INDICES

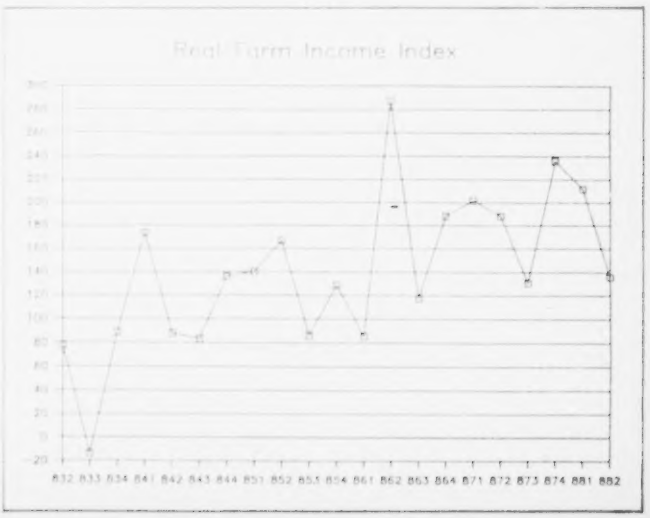
Quarterly Data 1983-1988

Adjusted for Seasonal Variation









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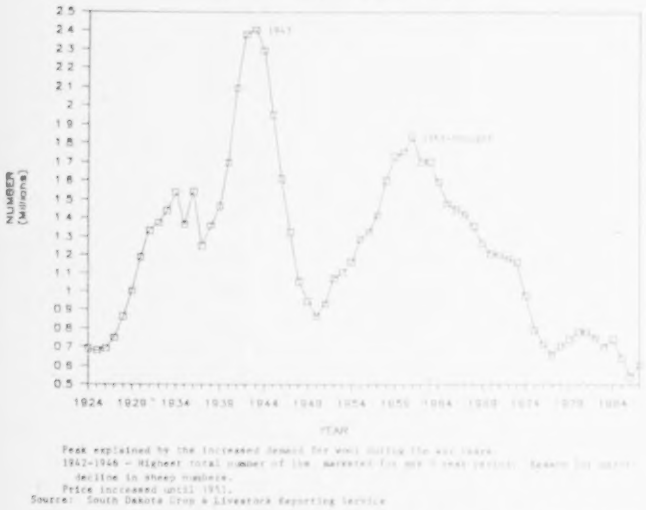
History

The sheep industry began in central Asia 10,000 years ago when man discovered the product values of the animal. It provided two of life's essentials: soft, warm covering and food. The history of the industry of South Dakota goes back at least to 1844 and it has made its presence known ever since.

The U.S. Department of Agriculture began keeping records of production, disposition, and income on sheep in 1924. The graph below indicates production fluctuation by year and shows the state peak production year to be 1943.

Graph 1
South Dakota
Number Head of Sheep



Peak explained by the increased demand for wool during the war years.
1942-1946 = Highest total number of lbs. marketed for any 5 year period. Reason for marked decline in sheep numbers.
Price increased until 1951.
Source: South Dakota Crop & Livestock Reporting Service

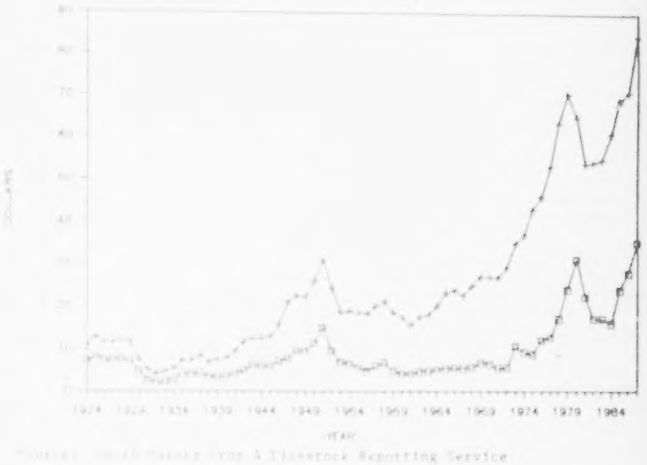
In 1924, there were 689,000 head of sheep on South Dakota farms. Thereafter, there was a fairly steady increase in the sheep count, except during the Great Depression, until it reached the peak in 1943 of 2,407,000. The drastic increase from 1937 to 1943 came because of a greater demand for wool to clothe the soldiers of Allied Forces during World War II. There was a severe drop in production for the next seven years, followed by an upward trend starting in 1950 and continuing through 1961. During this time the price of sheep and lambs was good, so producers expanded their herds in response to the positive market.

The major sheep producing areas in the state were located along its northwestern quadrant. One cause for decline in production since 1961 was a severe drought in that area. Another reason was competition not only from producers in New Zealand, Australia, Japan, Italy, and the British Isles, but also from synthetic fibers. For the next 24 years the demand for lambs and wool diminished annually until 1986, when the farm flock count reached its all time low of 520,000 head in the state. (graph 1.)

In addition to competition, a major cause for this 24-year decline was legislation concerning a compound commonly referred to as 1080. It is a toxic chemical inserted into a collar and fastened around the neck of the sheep. When coyotes or dogs bite the animal's neck, it squirts into their mouths, killing the predators.[1] The environmental lobby and the enforcement of the Endangered Species Act combined to outlaw compound 1080 in 1972. The result was an increase in the loss of sheep and lambs to predators across the north-central states. Joseph M. Schaefer and his associates at the Iowa State University Department of Animal Ecology stated losses of sheep in Iowa to predators alone was nearly as high as those from diseases and other non-predator causes. "More than 40% of the southern Iowa farmers responding to a 1986 survey said they had sheep killed by dogs and coyotes during a recent year." The article went on to estimate this loss "at more than $500,000 annually in recent years."[2]

Another problem for sheepmen has been the dramatic change in prices. Graph 2 shows a 60-year trend in the price of sheep and lambs by 100 weight. By comparing graphs 1 and 2, one can easily observe a relationship between supply and demand. Since mid-century, as the number of sheep increased, the price declined. As the number of sheep declined, the prices increased. But as producers built up their herds in the late 1970's and early 1980's the price for lambs dropped sharply again.

Graph 2
Prices/Cwt.
Lambs and Sheep



Source: South Dakota Crop & Livestock Reporting Service

Graph 2 also shows that while the prices of sheep and lambs tended to rise and fall together, the value of the lambs grew faster than that of the older breeding stock. This helps explain the drop in the population of sheep over the past 25 years. A producer appeared to sell all of his lambs because he received a good price for them. In doing this, he did not expand or even replace his breeding stock, so the number of head generally declined. (See graph 1 for the period 1962-1987.) The failure to replenish replacement stock is not the usual way to operate, but sheep farmers and ranchers were not willing to turn down a good profit for their lambs. Later, many decided to expand their herds when lamb profits became less attractive.

Market Movements for Sheep

Supply and demand have been guiding forces behind the industry. This has not been consistently true for sheep one year or older. As their numbers declined from the late 1950's, the market price of $15.00 per hundred weight in 1951 remained fairly constant until 1978, when it rose to $17.00 and two years later went up sharply to a high of $30.90. After a drop in price in the early 1980's, the sheep market again climbed to reach a high of $34.90 in 1987. The lamb market, however, has responded quickly to supply and demand forces. From $30.70 per hundred weight in 1951 the price rose to $70.10 in 1979 and to $84.50 in 1987. From 1951 to the 1980's, lamb prices more than doubled.

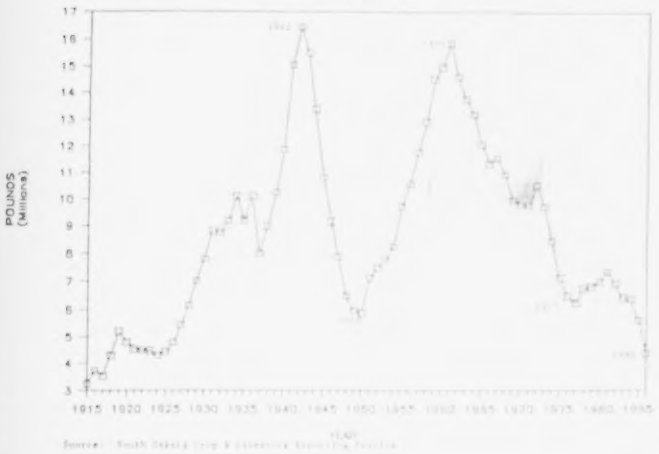
Historically, the lowest price recorded in South Dakota

since sheep producers began to keep records was in 1932, when they sold at $2.05 per hundred weight. Subsequently, the price fluctuated according to demand. Throughout the last two decades, older sheep prices have fallen to lows of $5.40, $8.70, and $16.00 in 1971, 1975, and 1984, respectively.

Market Movements for Wool

Recordkeeping for wool prices began nine years earlier than for sheep and lambs, in 1915. At that time South Dakota produced 3,255,000 pounds of wool.

Graph 3
Wool Produced
in South Dakota



The wool clip increased steadily until it peaked in 1942 at 16,423,000 pounds in the state. Reasons for the great demand at the time included both the initiation of federal incentive payments according to price floors late in the 1930's and the federal purchase of the entire domestic clip during World War II. The price in 1942 was 5.39 per pound. A glut on the market brought sheep numbers down by 1950. Correspondingly, the clip for South Dakota dropped to 5,881,000 pounds.

By 1950, wool producers and buyers had two wartime experiences to guide their expectations: World War I and World War II. In both instances, sharp increases in demand for the military uses of wool brought higher prices. When the Korean War broke out, wool producers expected a similar trend but experienced instead what many remember as the "Debacle of 1951." Great stores of wool in federal warehouses and the nature of the war prevented an increase in the demand for wool and influenced the price. In response, the conservative Dwight Eisenhower signed the Wool Act of 1954 to bring producers greater stability through incentive payments which were funded by duties on wool imports, in order to save their industry. It was this Act, not normal demand because of a shortage, that stabilized prices in the following years. Indeed, incentive payments had to offset encroachment from increasing imports as well as from producers of synthetic fibers. Congress and the President viewed the Wool Act as a temporary measure, but competition led to its repeated reenactment. With stability under incentive payments, prices began to rise and wool production responded. By 1961, 1,612,000 head of sheep produced 15,828,000 pounds of wool in South Dakota. For the next 25 years, between 1961 and 1986 sheep numbers have been on a downward slide, reaching an all time low in 1986 of 520,000 head of sheep, producing only 4,554,000 pounds of wool.

Wool marketing specialists have offered several explanations for the steady decline of production since 1960. One has been the lure of subsidy payments for the production of crops, coupled with the plowing of grassland for agricultural production. Another has been a cultural change in expectations among rural people that has caused them to shrink from the hardships of diversified farming in favor of the convenience of cash crop production. Yet another explanation has been a steady rise in the value of the dollar abroad, except for a brief time in the 1970's, which has made it impossible for American producers to compete on a free world market.

Production Districts

The U.S. Department of Agriculture divided South Dakota into seven districts for purposes of sheep production. Each has a number of counties ranging from four in the southwest to nine in the east-central district. Map 1 shows the percentage of sheep producers in these districts. Historically, Harding, Butte, and Perkins counties in the northwest district have been credited with 34% of the sheep produced in South Dakota. More surprising than this is the fact that for over half a century, the number of sheep in farm flocks east of the Missouri have equalled the number of sheep on the range west of the river.

Map 1
Percentage of Sheep Produced
by Districts 1924-1976

Graph 4 highlights the three top sheep producing counties in South Dakota: Butte, Harding, and Perkins. This has been the case from the earliest records in 1924 to the year 1975, when county statistics were abandoned. As the leader, Butte County has never been in second place. Harding has maintained a slight edge over Perkins County throughout this period. In all three counties, producers justly lay claim to living at the center of sheep country where farms are ranches, flocks are herds, and numbers are large. When a "farm flock" in East River may have included between 25 and 100 head, a range "herd" from out west may have from 800 to 8,000 head. The largest herd on record was one of 50,000 head owned by Myron John Smiley around 1904, and in 1988 some West River producers still report band numbers well in excess of 5,000. (graph IV)

Continued on page 6.

Continued from page 5.

Graph 4
Top Three
Sheep Producing Counties in S.D.

Earlier in the article it was mentioned that five thousand (5,000) or more people are now involved in the industry earning $35 to $40 million in gross income from sheep and wool. Alone, that statistical information should inspire great appreciation for the industry from every South Dakotan. Agriculture in South Dakota wears many faces. All have an impact on the economy and upon the lives of the residents. Sheepmen, women, and their children deserve greater appreciation for their efforts. They do have an impact on the lives of us all in this land of infinite variety.

Like other livestock producers, these shepherds serve as models of life close to nature and man's roots. Much more can be said about the sheep industry and its value to the state, and the writer intends to supply more information in future publications. But that will keep for another day.

[1]The Shepherd, Vol. 30 No. 10, October 1985, p. 25.
[2]The Shepherd, Vol. 31 No. 7, July 1986, p. 18.

Continued from page 1.

process alone. It must be viewed as a cooperative effort with both parties contributing at various stages. The entire arrangement can be divided into three phases; the pre-contract phase, the execution phase, and the implementation phase. Each phase, including the roles or obligations of each participant, will be discussed.

The Pre-Contract Phase

The time period leading up to the signing of the contract and the execution is no less important than the final results of the project. This is where the foundation of the purchaser-supplier relationship is established. The roles of both parties center around a common theme - preparation. The purchaser is responsible for supplying information to the supplier, developing a hierarchy of information needs and estimating their budgetary constraints.

The purchaser is, perhaps, the best source of background information on his own firm. This must be supplied to the prospective researcher. This information will help the researcher to better understand the problem situation. Without it, very little good can be accomplished. The purchaser must also develop a hierarchy of information needs. As was discussed earlier, this represents the information that is deemed necessary to reduce uncertainty to tolerable levels. A fairly safe assumption at this point is that the purchaser cannot afford all the information he would like to have. Realizing this, the next task is to develop an estimate of how much the firm can afford to spend in order to obtain the needed information. Once again, the purchaser must keep in mind that adequate funds must be available to implement the resulting strategies. There is a trade off between how much information is wanted and how much can be afforded. In the context of the research process, these activities are part of the problem definition and situation analysis stages.

The supplier is responsible for gathering basic background information on the firm and the firm's industry. A good market research effort requires the combination of two areas of expertise; a thorough knowledge of research methodologies and a thorough understanding of the problem situation. A number of supplier firms specialize in specific industries or categories of trade. Examples would be the automotive, communications, transportation or apparel inustries. Others specialize according to different research techniques such as focus group interviews, telephone surveys, personal interviews, new product testing or market potential estimation. Unless the supplier has specialized in your particular line of business, there is a considerable amount of knowledge that must be obtained in order to effectively design and execute a research project that really answers the purchaser's questions.

The supplier is also responsible for developing a research proposal specifying the research question, the research design, data requirements, the project outcomes, and the expected cost. All of this must be done with consideration of the purchaser's hierarchy of information needs and the budgetary constraints. Once the purchaser contacts the prospective researcher with his information hierarchy and budget constraints this phase becomes iterative in nature. Each will supply the other with needed information. This will often result in a series of restatements of the hierarchy and budget. The result is a contract agreement that states the expectations each has of the other and with which both feel comfortable. This contract should also include a stipulation for renegotiation in light of new information or a failure to perform on the part of either party.

The Execution Phase

Once the contract has been negotiated, the purchaser's major role is that of an information source. The supplier's initial role is that of the technical expert. He/She will carry out refinements of the research design and execute data collection and analysis. When the research project enters the recommendation stage, the supplier's role turns to that of the communicator.

The success of the research project is highly dependent upon the supplier's access to data. Much of this access is due to efforts made during the research design and data collection stages of the research process. For some of the data, however, the supplier is at the mercy of the purchaser. The purchaser must supply detailed information on his firm. Withholding information from the researcher can greatly

decrease his ability to successfully execute the research project. It is true that much of the needed information may be proprietary in nature but a simple nondisclosure agreement should offer adequate protection. This is in addition to the implied confidentiality of the purchaser-supplier relationship. If it is felt that the supplier cannot be trusted, don't hire them!

The researcher's responsibilities center around developing the technically sound development and execution of the research design and data analysis. It is his obligation to fully understand the strengths and weaknesses of the methodologies employed and to verify that any underlying assumptions have been met at a reasonable level. In the final stage of presenting the results and making recommendations, the researcher must reiterate any limitations of the study. This should include any drawbacks associated with the research design, sampling design, sample size, and analysis techniques employed in the study. The results should be communicated in a concise, understandable manner including a written report and a formal presentation to the purchaser. The report should also include recommendations for the implementation of the results of the project.

One last obligation which is applicable to both parties is to maintain frequent, open communications throughout the entire research project. Both parties have a significant stake in the success of the project and that success is highly dependent upon the availability of adequate information. If either party feels that it has identified additional information that would be pertinent to the project it should be discussed.

The Implementation Phase

Although the research project is technically concluded at this point, its utility has yet to be realized. The goal of market research is to provide useful information for the

Continued on page 8.

SOUTH DAKOTA OUTLOOK

by Trent Stowater

The South Dakota Econometric Model shows a below normal growth rate for South Dakota in the next couple of years. All the variables shown are growing slower than normal in the forecasted period except for farm income. Farm income for 1988 is decreasing and shows almost no growth for 1989.

Total employment for South Dakota should increase through both 1988 and 1989, but the changes will be small. The outlook for nonag employment looks the same as total employment with small increases in both years. The unemployment rate for South Dakota, which is forecasted at 4.1% for 1989, is close to the natural rate of around four percent for South Dakota.[1]

SOUTH DAKOTA ECONOMETRIC MODEL
(Business Research Bureau, University of South Dakota)

VARIABLE	1987.3	1987.4	1988.1	1988.2	1988.3	1988.4	1989.1	1989.2	1989.3	1989.4	1990.1	1990.2	1987	1988	1989
			HISTORICAL					FORECAST							
SOUTH DAKOTA DATA-MIL OF $'s															
SD PERS. INC (CUR $'s)	$8,645	$9,360	$9,269	$9,831	$9,733	$9,931	$9,985	$9,727	$9,861	$9,985	$10,106	$10,227	$8,901	$9,241	$9,798
SD PERS. INC (82 $'s)	7,230	7,748	7,585	7,995	7,879	7,958	7,901	7,687	7,747	7,840	7,935	8,031	7,467	7,829	7,835
NONFARM (CUR $'s)	7,943	8,129	8,141	8,274	8,291	8,335	8,448	8,522	8,609	8,729	8,853	8,978	7,915	8,331	8,836
NONFARM (82 $'s)	6,647	6,729	6,664	6,678	6,708	6,733	6,761	6,788	6,815	6,843	6,866	6,898	6,657	6,695	6,801
FARM (CUR $'s)	701	1,232	1,128	757	442	596	540	205	252	256	253	249	986	910	954
FARM (82 $'s)	583	1,020	921	617	373	504	460	173	213	214	215	215	809	732	734
SD WAGE & SAL (CUR $'s)	4,027	4,131	4,133	4,209	4,247	4,322	4,381	4,436	4,497	4,554	4,560	4,565	4,017	4,229	4,460
SD WAGE & SAL (82 $'s)	3,370	3,420	3,371	3,397	3,410	3,418	3,429	3,433	3,435	3,435	3,435	3,436	3,579	3,399	3,433
SD GROSS SALES (CUR $'s)	6,031	6,365	6,362	6,486	6,446	6,622	6,657	6,636	6,599	6,622	6,642	6,711	11,759	13,270	13,992
SD GROSS SALES (82 $'s)	4,537	4,706	4,706	4,794	4,764	4,894	4,922	4,902	4,853	4,851	4,856	4,906	9,184	10,155	10,762
SD TOT EMPLOYMENT (000's)	340.9	345.1	330.5	350.3	345.4	334.8	341.9	356.1	362.4	344.1	333.1	350.9	340.2	343.0	340.6
NONAG EMPLOYMENT (000's)	257.5	257.5	258.0	258.6	259.1	260.4	261.6	262.9	263.1	263.4	263.9	264.5	254.9	259.4	263.5
UNEMPLOYMENT RATE (%)	3.5	4.4	4.0	4.1	4.3	4.2	5.3	3.9	3.6	4.6	4.4	4.1	4.2	3.8	4.1
U.S. DATA-BIL OF $'s															
GNP (82 $'s)	$4,065	$4,093	$4,094	$4,107	$4,016	$4,041	$4,075	$4,096	$4,108	$4,121	$4,133	$4,145	$3,847	$4,000	$4,100
FARM (CUR $'s)	33	41	41	41	40	41	41	41	41	41	41	41	41	41	41
FARM (82 $'s)	29	36	36	36	35	36	36	36	36	36	36	36	35	36	36
UNEMPLOYMENT RATE (%)	6.0	5.8	5.8	5.9	5.8	5.8	5.8	5.8	5.7	5.7	5.6	5.5	6.1	5.9	5.5
90 DAY T-BILL RATE (%)	6.0	6.0	6.8	6.8	7.0	7.3	7.4	7.5	7.6	6.7	6.5	6.3	5.8	6.8	7.2
REAL INTEREST RATE (%)	3.4	3.3	4.2	4.2	4.8	5.2	5.8	5.8	5.8	5.8	5.8	5.8	2.6	3.5	3.8
INFLATION RATE (%)	2.5	2.7	2.6	2.7	4.1	4.2	4.4	4.5	4.4	4.3	4.2	4.1	3.2	4.0	4.4
GNP DEFLATOR (82 = 100)	117.9	118.7	119.6	120.6	122.7	123.5	124.8	126.0	127.6	128.9	130.2	131.5	117.4	121.4	126.9
PERS CON DEFL (82 = 100)	119.5	120.8	122.2	123.9	125.1	125.9	127.8	129.2	130.9	132.0	133.3	134.7	118.9	124.5	129.9
PERCENTAGE CHANGE (ANNUAL RATES)															
SOUTH DAKOTA DATA															
SD PERS. INC (CUR $'s)	-7.32	32.02	-3.92	30.12	8.92	8.62	6.52	5.92	5.52	5.02	4.92	4.82	6.62	3.82	5.92
SD PERS. INC (82 $'s)	-11.52	26.22	-8.52	25.62	4.92	4.32	2.32	1.42	1.12	0.92	0.82	0.82	0.42	-0.82	1.42
NONFARM (CUR $'s)	5.62	9.32	0.72	6.42	5.62	5.92	5.92	6.12	6.02	5.62	5.52	5.42	5.62	5.32	6.12
NONFARM (82 $'s)	1.52	4.92	-3.32	0.92	1.72	1.62	1.62	1.62	1.62	1.52	1.42	1.42	1.52	0.62	1.62
FARM (CUR $'s)	-111.02	290.02	-34.42	-131.12	-44.02	-20.22	-12.02	-8.42	-8.02	-6.62	-5.32	-3.62	15.12	-7.72	4.82
FARM (82 $'s)	-113.02	290.52	-30.62	-134.02	-45.52	-20.62	-12.62	-8.52	-8.12	-6.72	-5.32	-3.52	10.62	-11.72	0.22
SD WAGE & SAL (CUR $'s)	5.72	10.32	-1.22	6.72	3.52	5.22	5.02	5.12	4.62	4.12	4.02	4.02	5.92	5.32	5.42
SD WAGE & SAL (82 $'s)	1.72	5.92	-5.72	3.12	2.52	2.92	3.02	3.02	3.02	3.02	3.02	3.02	1.62	0.62	1.02
SD GROSS SALES (CUR $'s)	5.52	11.32	14.32	10.62	13.02	7.62	10.72	12.32	9.32	5.52	6.02	5.42	10.72	12.92	5.42
SD GROSS SALES (82 $'s)	4.52	11.32	5.42	11.42	8.72	8.02	5.02	11.92	10.12	5.12	1.62	1.32	6.32	7.82	1.02
SD TOT EMPLOYMENT	4.92	0.62	1.62	2.52	0.22	1.72	0.92	0.22	0.22	0.42	0.42	0.22	2.12	0.92	1.62
NONAG EMPLOYMENT	1.12	0.92	2.02	2.02	1.62	1.12	0.42	0.42	1.32	1.02	0.72	0.72	1.22	1.82	0.62
U.S. DATA															
GNP (82 $'s)	4.42	6.02	3.42	2.52	3.12	2.52	3.42	1.42	1.32	1.22	1.22	1.22	3.42	4.02	2.52
FARM (CUR $'s)	-72.62	134.12	1.62	-11.62	-27.52	1.02	0.02	0.02	0.02	0.02	0.02	0.02	17.22	3.72	-4.22
FARM (82 $'s)	-74.62	130.52	0.62	-16.02	-31.62	-3.22	-4.42	-4.42	-4.42	-4.02	-4.02	-4.02	13.52	0.42	-6.32
GNP DEFLATOR	2.72	2.72	3.02	3.72	4.02	4.32	4.22	4.52	4.42	4.12	4.02	4.02	3.02	3.42	4.52
PERS CON DEFL	4.12	4.42	4.62	5.62	4.02	4.32	4.22	4.52	4.42	4.12	4.02	4.02	4.12	4.72	4.42

Forecast Date: 1988.3 to 1990.2

[1]Kevin J. Murphy, *The Full Employment Unemployment Rate*, (Knoxville, TN: Center for Business and Economic Research, August, 1985): 60.

decision making process. The intent of the purchaser is to use this good information to reduce uncertainty and make better decisions. If the guidelines for good market research have been followed, the former will have been successful. Much of the responsibility for the latter rests with the purchaser; however, the supplier can be of assistance.

Assuming that good research has been executed, the results should present an accurate, reliable answer to the research question. The purchaser should then approach the use of this information with an open mind. If the results were negative and they had hoped for positive, it would be a waste of time and resources if they are placed in a drawer and never used. They may save the firm from making costly mistakes. From the researcher's perspective, there are few things as disheartening as seeing your work, which is technically and conceptually sound, go unused when its application could very well make a significant contribution to the purchaser's firm. This is good reason for follow-up activities by the supplier. There may be misconceptions that are blocking the implementation of the results. If this is the case, they might be easily corrected. If, however, the resistance is due to a complete refusal to accept the results then nothing the researcher can do will facilitate implementation.

The key consideration throughout these three phases of the contract arrangement is that both parties have active roles to play. The purchaser does not sit back and wait for the results once the contract is signed. He/She provides input throughout most of the stages of the market research process. The researcher, on the other hand, is not necessarily finished after the written report is delivered and the presentation is made. As a matter of interest in the client and commitment to the research product, follow-up contacts should be made in order to monitor the implementation of the results.

SUMMARY

The purpose of this article was to present a brief overview of the market research process and to highlight a number of characteristics of good research. In spite of some negative experiences in the past, many firms realize that a few relatively simple steps can result in mutually beneficial arrangements in the future. The key to a positive experience is a basic understanding and appreciation of the market research process. In addition, both parties must be committed to fulfilling their respective roles in that process. In many problem situations, market research offers an effective and cost efficient approach to uncertainty reduction; however, just as it is with anything worthwhile, market research requires the effort and commitment of all parties involved.

SOUTH DAKOTA
"THE SUNSHINE STATE"

The State Data Center (SDC) located at the Business Research Bureau compiles and releases population and demographic data for South Dakota. One of their recent releases is *The 1988 South Dakota Community Abstract*, Vol. I, which summarizes statistical data for the state, counties and cities. The following table includes data for the state of South Dakota. For further information regarding this publication or other SDC releases contact:

DeVee Dykstra, Director
State Data Center
Business Research Bureau
414 E. Clark
Vermillion, SD 57069-2390
605-677-5287

1. POPULATION

	Total Pop.	Percent Change	Occupied Households	Persons by Age			
				<=18	19-44	45-64	65+
1960	680,514	--	194,821	1970:	254,959	196,967	133,097	80,484
1970	666,257	-2.10	200,807	Median Age:		29.3		
1980	690,768	3.68	242,523					
1982	696,802	0.87	249,000	1985:	219,445	255,721	129,579	93,039
1984	705,795	1.29	257,000	Median Age:		29.8		
1985	708,118	0.33	260,000					
1986	707,160	-0.14	261,000	1985:	215,133	271,252	124,435	97,298
1987	709,000	0.26	264,000	Median Age:		30.1		
1990*	712,839	--	--					

*Projected 1990 population.

2. VITAL STATISTICS

	Births	Birth Rate	Deaths	Death Rate	Marriage Rate	Divorce Rate
1980	13,256	19.2	6,539	9.5	12.7	4.1
1981	12,725	18.4	6,434	9.3	12.5	4.0
1982	12,839	18.6	6,588	9.5	12.1	3.7
1983	12,521	18.0	6,622	9.5	11.5	3.7
1984	12,431	17.8	6,512	9.3	11.5	3.6
1985	12,129	17.2	6,604	9.4	11.0	3.6
1986	11,623	16.4	6,593	9.3	10.4	3.5

3. INCOME

	Per Capita	Average Household	Family Income Average	Family Income Median*
1979	$5,696	$15,550	$18,238	$19,209
1981	$6,749	$18,425	--	$21,708
1983	$7,290	$19,902	--	$23,998
1985	$8,553	$23,290	--	$26,353

*Median cited here is for 4-person families.
1979 Median Income for all families in South Dakota was $15,993.

4. EMPLOYMENT

Employment:

1980	1986	1987
349,148	368,249	N/A

Unemployment Rate:

1980	1986	1987
5.2%	7.0%	6.1%

Civilian Labor Force (1980):
Manufacturing = 28,555
Non-manufacturing = 268,142
Total = 296,697

Avg. Travel Time to Work: 12.9 min.

5. BUILDING PERMITS

	1984	1985	1986	1987
Residential:				
One-family houses	2,232	1,359	1,257	1,214
Two-family bldgs	21	27	23	21
Three- and four-family bldgs	26	12	21	15
Five-or-more family bldgs	63	50	28	37
Mobile homes	187	222	327	N/R
Non-residential:				
Industrial bldgs	79	56	92	98
Parking garages	32	0	1	16
Offices & mercantile bldgs	186	142	215	212
Hospitals, public works & schools	40	38	50	33
Other non-residential bldgs	852	491	828	1,127

6. STATE GOVERNMENT FINANCES

General Expenditures ($000's):

	1985	1986
Education	254,936	261,919
Public Welfare	119,877	126,114
Hospitals	31,554	28,860
Highways	181,358	175,633
Police	17,573	18,383

Summary Totals ($000,000's):

	1985	1986
Revenue	1,082	1,241
Expenditures	1,005	1,074

7. SALES TAX LICENSES, BUSINESS ESTABLISHMENTS (with payroll), and TAXABLE SALES

Industry	Licenses 1985	Licenses 1986	Licenses 1987	Establishments 1984	Establishments 1985	Establishments 1986
Agriculture	381	468	585	257	269	263
Construction	457	400	361	1,629	1,581	1,580
Finance/Insurance	772	983	905	1,612	1,678	1,666
Manufacturing	965	1,062	1,054	728	735	727
Retail Trade	15,179	15,596	16,216	5,304	5,227	5,315
Services	11,744	12,727	13,129	5,137	5,215	5,643
Trans./Util.	500	605	559	1,047	1,031	1,062
Wholesale Trade	2,390	1,662	2,848	1,801	1,761	1,722
Mining	142	148	130	54	55	58

Compiled by: State Data Center, USD, Vermillion, SD 57069

TAXABLE SALES

Counties and Selected Cities in South Dakota

Jan.-Aug. 1987 and 1988

(In $000's)

REGION I

	Jan.-Aug. 1987	Jan.-Aug. 1988	% Change
Brookings	75,209	81,136	7.9
Brookings	59,191	64,749	9.2
Elkton	1,343	1,288	-4.1
Volga	2,557	2,690	5.2
Clark	6,472	6,936	7.2
Clark	4,993	5,325	7.5
Codington	109,860	121,680	10.8
Watertown	106,746	117,827	10.4
Deuel	10,062	11,118	11.3
Clear Lake	7,286	8,472	16.4
Gary	820	854	4.1
Toronto	1,061	1,064	0.8
Grant	27,096	27,900	3.0
Big Stone C	1,478	1,202	-18.9
Milbank	23,703	24,121	1.7
Hamlin	8,526	9,155	7.4
Bryant	1,466	1,576	7.5
Castlewood	847	890	5.0
Estelline	1,041	1,271	11.3
Hayti	1,550	1,845	17.7
Lake Norden	666	678	1.2
Kingsbury	13,041	14,117	2.0
Arlington	3,890	3,738	-3.9
De Smet	6,333	6,588	4.0
Lake Preston	2,018	2,154	7.0
Lake	30,470	33,964	11.5
Madison	28,324	31,628	11.7
Miner	3,997	4,409	10.2
Howard	4,675	5,275	12.8
Moody	17,972	19,147	7.1
Colman	10,809	11,881	9.9
Flandreau	6,392	6,516	1.9
TOTAL	305,598	331,862	8.7

REGION II

	Jan.-Aug. 1987	Jan.-Aug. 1988	% Change
Aur			
Clay	31,022	34,480	11.2
Vermillion	27,627	30,839	11.6
Lincoln	24,726	27,611	11.7
Canton	9,941	10,255	3.1
Lennox	4,606	5,169	10.9
McCook	10,945	11,807	7.9
Bridgewater	1,558	1,594	2.6
Canistota	1,154	1,218	5.3
Salem	6,372	6,980	9.5
Minnehaha	674,779	740,129	9.7
Baltic	1,548	1,849	19.4
Brandon	9,048	10,232	13.1
Colton	1,790	1,924	7.5
Crooks Hospita	5,877	7,565	9.1
Garretson	3,191	3,437	8.0
Hartford	11,801	12,895	15.0
Sioux Falls	637,615	699,125	9.6
Turner	14,809	15,885	7.1
Centerville	3,004	3,089	3.2
Marion	5,754	6,128	6.5
Parker	2,505	2,570	2.6
Union	20,033	21,554	7.6
Alcester	1,823	1,708	-6.0
Beresford	6,530	7,266	9.5
Elk Point	4,028	4,326	7.4
TOTAL	776,314	851,450	9.7

REGION III

	Jan.-Aug. 1987	Jan.-Aug. 1988	% Change
Aurora	7,238	7,710	6.5
Plankinton	4,819	5,136	6.6
Bon Homme	14,400	15,868	9.9
Avon	2,758	2,980	8.1
Scotland	2,409	2,838	8.8
Springfield	2,283	2,484	8.8
Tabor	2,468	3,200	29.2
Tyndall	3,894	4,194	10.1
Brule	17,176	18,278	6.4
Chamberlain	13,799	14,818	7.4
Pickell	2,993	3,000	0.3
Charles Mix	41,074	43,182	5.1
Geddes	634	654	3.1
Davison	58,779	63,518	8.1
Ethan	1,104	1,170	6.0
Mitchell	57,675	62,348	8.1
Douglas	7,018	8,147	16.1
Armour	3,191	3,720	16.6
Corsica	2,826	3,419	21.0
Dewey	15,276	16,123	5.5
Firesteel	1,104	1,081	-2.1
Gregory	6,758	7,301	11.0
Hanson	5,779	6,027	4.4
Alexandria	1,277	1,470	15.0
Lake Andes	3,224	3,710	15.1
Platte	9,197	10,416	13.3
Wagner	7,451	7,789	4.5
Jerauld	3,191	3,722	16.6
Wessington	2,826	3,419	21.0
Sanborn	2,387	2,819	18.1
Woonsocket	2,073	2,350	13.3
Jamestown	80,309	85,668	6.7
Spencer	76,149	82,143	7.9
TOTAL	282,823	303,256	7.2

REGION IV

	Jan.-Aug. 1987	Jan.-Aug. 1988	% Change
Beadle	74,799	75,319	1.0
Huron	71,179	71,692	0.7
Brown	174,798	176,264	1.0
Aberdeen	163,679	164,274	0.4
Groton	4,004	4,218	4.9
Day	16,442	17,016	3.5
Bristol	770	805	10.1
Webby	1,797	1,811	0.8
Webster	12,816	13,359	16.2
Edmunds	9,264	9,249	-0.2
Faulk	3,884	3,884	0.0
Hand	10,408	11,802	13.3
Miller	11,149	12,549	10.5
McPherson	6,056	5,941	-1.7
Eureka	4,410	4,362	-1.1
Kidder	1,884	2,118	12.4
Wessel	1,004	871	-12.9
Dupree	4,030	4,018	-0.3
Isabel	1,521	1,484	-2.4
Lemmon	6,426	6,426	0.0
Reva	1,190	1,190	0.0
Lyman	8,942	8,889	-0.6
Jackson	3,892	4,063	4.3
Kennebec	1,521	1,694	10.5
Murdo	2,038	2,087	2.4
White River	1,790	1,778	-0.9
Perkins	11,998	12,107	0.9
Lemmon	9,225	9,418	2.1
Potter	3,804	3,792	-0.3
Gettysburg	3,040	3,040	0.0
Hoven	2,410	2,352	-2.4
Sully	1,948	1,948	0.0
Onida	1,941	2,481	27.8
Todd	1,063	1,809	70.2
Mission	3,704	3,908	5.5
Walworth	20,470	20,711	1.2
Mobridge	20,047	20,332	1.4
Selby	4,671	4,563	-2.3
Dimock	1,279	1,218	-4.8
Hoven	1,410	1,469	4.2
TOTAL	210,047	220,308	4.9

REGION V

	Jan.-Aug. 1987	Jan.-Aug. 1988	% Change
Buffalo	90	97	7.8
Campbell	4,154	4,159	1.3
Herreid	2,141	2,229	4.1
Pollock	1,886	1,831	-2.9
Corson	9,139	9,112	-0.3
McLaughlin	842	847	0.6
Mclaughlin	802	838	4.5
Dewey	8,351	8,546	2.4
Eagle Butte	5,785	5,956	3.0
Iseabel	1,218	1,308	7.4
Timber Lake	1,628	1,449	-11.0
Haakon	3,114	3,265	5.1
Philip	7,427	7,512	1.1
Hughes	63,487	72,088	8.1
Hyde	1,884	1,818	-3.5
Highmore	3,114	3,426	8.0
Jones	3,090	3,407	4.9
Murdo	7,435	7,771	4.5
Lyman	8,942	8,889	-0.6
Jackson	3,892	4,063	4.3
Kennebec	1,521	1,694	10.5
Lyman	8,942	8,889	-0.6
Perkins	11,998	12,107	0.9
Lemmon	9,225	9,418	2.1
Potter	3,804	3,792	-0.3
Gettysburg	3,040	3,040	0.0
Hoven	2,410	2,352	-2.4
Stanley	10,288	10,466	2.9
Ft. Pierre	10,142	10,405	2.5
Dolly	3,946	4,225	7.1
Onida	2,941	2,981	1.4
Troy	24,462	26,345	7.9
Wagner	23,745	25,396	7.0
Tyndall	1,063	1,809	3.9
Missouri	3,704	3,908	5.5
Walworth	20,470	20,711	1.2
Mobridge	20,047	20,332	1.4
Selby	4,671	4,563	-2.3
Dimock	1,279	1,218	-4.8
Hoven	1,410	1,469	4.2
TOTAL	210,047	220,308	4.9

REGION VI

	Jan.-Aug. 1987	Jan.-Aug. 1988	% Change
Bennett	7,141	8,311	16.4
Martin	9,578	8,188	-17.5
Butte	25,405	25,755	1.4
Belle Fche.	21,834	21,821	-0.5
Newell	3,600	3,764	4.6
Custer	23,231	21,751	-2.1
Custer	20,794	20,281	-2.7
Fall River	19,714	20,570	4.3
Edgemont	3,367	3,334	-0.4
Hot Sprgs.	15,865	16,767	5.7
Harding	1,938	2,202	13.6
Buffalo	1,398	1,848	32.2
Carlson	6,988	6,889	-0.8
Fedora	4,245	4,387	3.3
Lawrence	76,166	85,603	12.5
Deadwood	17,167	18,194	6.0
Lead	10,510	24,246	31.0
Spearfish	37,888	40,885	7.4
Whitewood	2,047	2,679	30.9
Meade	24,749	30,841	7.6
Faith	2,358	2,567	8.9
Sturgis	24,920	25,714	3.2
Pennington	474,541	488,207	2.9
Rapid City	431,498	445,390	3.2
Wall	18,231	19,956	9.4
Shannon	2,947	2,571	-12.8
Pine Ridge	458	538	17.5
Washabaugh	84	262	211.9
TOTAL	670,501	699,126	4.3
STATE TOTAL	2,588,325	2,757,114	6.5

SOUTH DAKOTA INCOME AND EMPLOYMENT

TOTAL PERSONAL INCOME
United States, Plains Region and States
Second Quarter 1987--Second Quarter 1988
(Millions of Dollars, Seasonally Adjusted at Annual Rates)

	1987			1988		% Change
	2nd Qtr.	3rd Qtr.	4th Qtr.	1st Qtr.	2nd Qtr.	2nd Qtr. 1987 2nd Qtr. 1988
United States	3,721,716	3,785,589	3,901,510	3,923,680	4,003,548	7.6
Plains States	256,311	256,927	272,976	270,425	271,580	6.0
Iowa	38,885	38,623	43,613	41,716	40,226	3.4
Kansas	37,272	37,077	38,692	38,803	39,977	7.3
Minnesota	66,358	67,315	70,478	70,757	70,949	6.9
Missouri	74,058	75,043	77,263	77,176	78,122	5.5
Nebraska	22,206	21,944	24,610	23,452	24,381	9.8
North Dakota	8,722	8,277	8,960	9,252	8,892	1.9
South Dakota	8,810	8,649	9,360	9,269	9,031	2.5

Note: Detail may not add to totals because of rounding.

Source: U.S. Department of Commerce, Bureau of Economic Analysis.

SOUTH DAKOTA NONAGRICULTURAL WAGE AND SALARY EMPLOYMENT
September 1987 and September 1988
(In Thousands)

				Average Weekly Hours		Average Hourly Earnings	
	Sept. 1987	Sept. 1988	% Change	Sept. 1987	Sept. 1988	Sept. 1987	Sept. 1988
Total Employment	258.6	262.2	1.4				
Total Private	201.6	205.3	1.8	34.3	34.1	7.19	7.32
Mining	2.6	2.6	0.0	41.5	41.8	12.22	12.10
Construction	11.9	12.1	1.7	38.1	41.4	9.44	9.69
Manufacturing	29.9	30.4	1.7	40.9	43.1	7.82	8.06
Durable Goods	16.3	16.9	3.7				
Fabricated Metals & Mach.	9.9	10.4	5.1				
Nondurable Goods	13.6	13.5	-0.7				
Food & Kindred Products	7.9	7.9	0.0				
Paper, Printing & Publishing	2.7	2.7	0.0				
Transportation & Pub. Utilities	12.5	12.8	2.4	37.9	38.6	10.39	10.39
Transportation	7.5	7.6	1.3				
Communication	2.8	3.0	7.1				
Electric/Gas/Sanitary Services	2.2	2.2	0.0				
Wholesale & Retail Trade	68.0	69.2	1.8	32.5	31.3	6.23	6.12
Wholesale Trade	16.6	16.8	1.2				
Durable Goods	7.5	7.5	0.0				
Nondurable Goods	9.1	9.3	2.2				
Retail Trade	51.5	52.4	1.7				
Finance, Insurance & Real Estate	14.4	14.7	2.1	38.2	35.8	7.07	7.40
Services	62.3	63.5	1.9	30.8	30.4	6.45	6.62
Hotels, Amuse., Pers. & Business	17.8	18.4	3.4				
Medical & Health	23.5	24.0	2.1				
Educational	4.3	4.2	-2.3				
Social	4.2	4.4	4.8				
Membership	8.9	9.0	1.1				
Government	57.0	56.9	-0.2				
Federal	10.9	10.8	-0.9				
State	15.0	15.0	0.0				
State Education	6.3	6.2	-1.6				
Local	31.1	31.1	0.0				
Local Education	17.3	17.4	0.6				

Source: South Dakota Department of Labor

For further information contact Nancy Nelson

SOUTH DAKOTA AGRICULTURAL INDICATORS

CROP PRODUCTION SUMMARY
SOUTH DAKOTA
November 1, 1988
(Thousand Bushels)

Crop	Unit	1987	Production 1988
Corn, All	Bu.	---	---
Corn, Grain	Bu.	228,250	112,500
Soybeans	Bu.	45,175	39,180
Sorghum, All	Bu.	---	---
Sorghum, Grain	Bu.	14,310	9,100
Sunflowers 1/ 3/	Bu.	386,950	200,000
Potatoes, Fall 4/	Bu.	2,310	1,855
Hay, All 2/ 3/	Tons	7,000	5,750
Alfalfa 3/ 3/	Tons	5,170	3,450
All Other 2/ 3/	Tons	1,820	2,300

1/ Yield in pounds
2/ Yield and production in tons
3/ Estimates carried forward from earlier forecast
4/ Yield and production in hundredweight

Source: South Dakota Crop & Livestock Reporter

PRICES RECEIVED BY FARMERS FOR COMMODITIES SOLD--SOUTH DAKOTA
SEPTEMBER 1987 AND 1988

		Base Period Price 1910-1914 Average	Sept. 1987	Sept. 1988	Sept.1988 Price as % of Base	Sept.1988 Price Above or Below Sept. 1987
Wheat	Bu.	.85	2.41	3.62	426	50.2
Corn	Bu.	.51	1.37	2.50	490	82.5
Oats	Bu.	.35	1.50	2.37	677	58.0
Barley	Bu.	.59	1.40	2.78	471	98.6
Flaxseed	Bu.	1.68	3.23	5.27	492	156.0
Milk, Whol	Cwt.	1.82	1/	1/		
Eggs	Doz.	0.198	1/	1/		
Cattle	Cwt.	5.28	67.30	63.90	1220	-5.1
Calves	Cwt.	6.08	98.80	101.00	1661	2.4
Hogs	Cwt.	3.07	54.50	40.50	573	-25.7
Sheep	Cwt.	4.24	41.30	32.60	769	-21.1
Lambs	Cwt.	5.46	91.00	70.30	1242	-22.7
Wool	Lb.	0.178	0.84	0.79	444	-6.0

1/ Season average price only. 2/ Not published.

Source: South Dakota Crop & Livestock Reporter.

SOUTH DAKOTA LOCAL CONDITIONS INDICATORS

SOUTH DAKOTA LOCAL CONDITIONS INDICATORS
(% Change Like Period Previous Yr.)

City	Total	Taxable Sales/1 Retail	Services	Telephone Services/2	Housing Starts/3	Postal Indicator/4	Employment*/2
Aberdeen	1.8	-0.9	-1.9	2.8	92.4	51.8	-0.6
Belle Fourche	-0.2	-1.5	9.1	2.3			-7.5
Brookings	4.6	6.1	11.0		-54.2	17.2	-1.1
Canton	19.2	8.4	10.0	0.8			0.3
Chamberlain	4.8	2.5	10.6	2.3			-2.6
Deadwood	12.5	-1.4	17.3	1.7			0.6
De Smet	4.5	-1.7	40.1	0.1			-11.0
Elk Point	5.2	6.1	-5.2	1.5			4.0
Hot Springs	3.2	3.3	4.0		0.0		-3.2
Huron	-4.7	4.7	-8.1	2.2	-59.1	16.8	1.1
Lead	14.3	-8.1	47.5	0.9			0.6
Madison	11.4	8.4	-4.2	1.1	-31.7		-2.3
Milbank	-2.2	0.9	0.6	0.7	15.7		-3.9
Mitchell	5.5	5.9	-5.5	2.2	-80.2	22.0	1.3
Mobridge	-0.4	-5.6	8.1	1.9			-3.0
Pierre	6.6	0.7	14.7	2.3	-23.0	12.6	2.4
Rapid City	5.2	2.8	5.9	1.6	-48.8	17.5	-1.9
Sioux Falls	10.0	7.3	8.4	3.0	46.5	31.2	-1.6
Spearfish	13.2	12.8	20.6		10.3		0.6
Sturgis	6.2	0.1	21.0	1.4			2.4
Vermillion	12.6	12.8	-2.3	0.8	5.1		-1.5
Watertown	7.5	6.7	11.2	3.3	-17.9	45.0	-0.5
Winner	5.8	3.2	10.5	1.5			4.3
Yankton	1.3	4.4	21.1	4.9	53.6	18.4	2.2

*Based on County Data

1/Percentage change for July-Aug 1987 and 1988.

2/Percentage change for Sept 1987 and 1988. Telephone data are for the number of access lines in service

3/Percentage change for January-Sept 1987 and 1988. Data reported for housing represent the value of housing starts.

4/Percentage change for the third quarter of 1987 and 1988. Included in postal indicators are: postage sales, postage meters for customers, meter imprint postage (3rd class regular), and second class postage.

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Continued from page 2.

dropped slightly from the seasonal upswing which began in the second quarter. Construction employment is 6 percent ahead of the third quarter of 1987.

On a seasonally adjusted basis, new truck registrations continued to climb in the third quarter of 1988, 2.7 percent above the number registered in the second quarter. Sales of new trucks again outpaced those of new cars which dropped 4.4 percent from the second to third quarter. Sales of new cars and trucks remain ahead of 1987 levels by 8.7 and 22.4 percent. Taxable sales remain strong, posting a 5.7 percent increase in the July-August bimonthly period compared to collections during the same time period in 1987.

Personal income continued its decline in the second quarter, dropping 3.7 percent from the previous quarter with a sharp drop in farm proprietors' income (– 35.8%) as the primary cause. Increases in non-farm income have held levels of total personal income relatively stable in the second quarter of 1988; farm income is down 27.9 percent while total personal income is 1.9 percent below the second quarter of 1987.

CONSUMER PRICE INDEX
United States
Jan.-Sept. 1988
(1982-1984=100)

Item	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Unadjusted % Change Jan.-Sept.
All Items	115.7	116.0	116.5	117.1	117.5	118.0	118.5	119.0	119.8	3.5
Food & beverages	115.7	115.8	116.0	116.7	117.1	117.6	118.8	119.4	120.1	3.8
Food	115.7	115.7	115.9	116.6	117.0	117.6	118.8	119.4	120.2	3.9
Alcoholic beverages	115.8	116.8	117.4	118.0	118.2	118.7	119.2	119.3	119.6	3.3
Housing	116.2	116.6	117.0	117.3	117.7	118.6	119.1	119.1	119.9	3.2
Shelter	124.6	125.0	125.6	125.8	126.2	126.5	127.4	128.2	128.4	3.0
Renters' costs	130.8	131.3	132.9	132.9	133.1	133.7	134.7	135.6	134.7	3.0
Homeowners' costs	128.5	129.0	129.2	129.4	129.9	130.4	131.0	131.8	132.6	3.2
Fuel & other utilities	102.4	102.8	102.7	102.8	103.5	105.9	106.0	106.1	106.4	3.9
Fuel	95.6	96.0	95.8	95.7	96.5	100.8	100.8	100.9	101.0	5.6
Fuel oil, coal & btld. gas	80.8	80.9	80.5	80.2	80.0	79.1	76.9	76.3	75.9	-6.1
Gas (piped) & electricity	101.5	101.9	101.7	101.6	102.6	107.8	108.1	108.3	108.5	6.9
Other util. & Pub. Services	121.3	121.8	121.7	122.3	122.6	122.3	122.4	122.6	123.3	1.6
Household furn. & operation	107.5	107.7	108.3	109.1	109.3	109.6	109.8	109.7	110.1	2.4
Apparel & upkeep	110.4	110.2	114.3	117.0	116.3	114.6	112.7	112.6	117.8	6.7
Transportation	107.1	105.8	106.5	107.2	108.1	108.5	108.9	109.6	109.7	2.4
Private transportation	106.0	105.7	105.4	106.0	107.0	107.4	107.8	108.6	108.6	2.5
Public transportation	121.8	120.8	121.4	122.4	122.4	123.2	123.7	123.7	124.0	1.8
Medical care	134.4	135.5	136.3	136.9	137.5	138.2	139.3	139.9	140.4	4.5
Entertainment	118.1	118.3	119.0	119.6	119.7	120.1	120.5	120.7	121.3	2.7
Other goods and services	133.4	134.2	134.6	134.8	135.1	135.5	136.5	137.5	140.0	4.9

*Consumer Price Index for all Urban Consumers

Source: Bureau of Labor Statistics, U.S. Dept. of Labor

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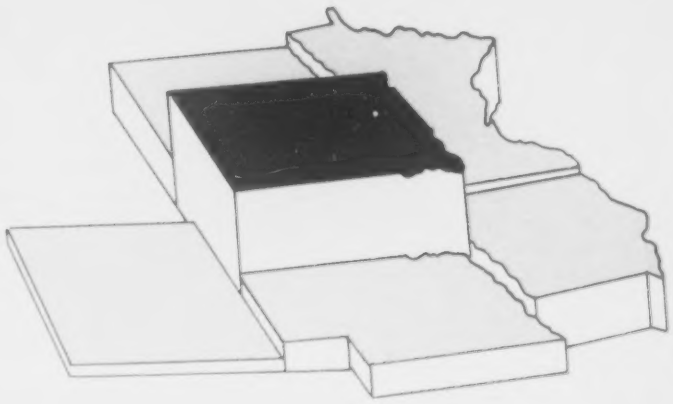

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General Indicators	Latest Quarter	SOUTH DAKOTA Latest Quarter	SOUTH DAKOTA Year Ago	SOUTH DAKOTA Percent Change	UNITED STATES Latest Quarter	UNITED STATES Year Ago	UNITED STATES Percent Change
Personal Income ($ Mil.)	1988-3	8,526	8,649	-1.4	4,074,838	3,785,589	7.6
Farm Prop. Income ($ Mil.)	1988-3	(63)	636	-109.9	28,447	33,369	-14.8
Non-ag Employment (Thous.)	1988-4	262	258	1.6	107,036	103,683	3.2
Unemployment Rate (%)	1988-4	4.3	4.4	-2.3	5.1	5.6	-8.9
Total Employment (Thous.)	1988-4	336	340	-1.2	116,181	113,795	2.1

Note: All U.S. data seasonally adjusted except for the unemployment rate and total employment. For South Dakota only personal income and farm proprietors' income are seasonally adjusted.

NEW GROSS STATE PRODUCT ESTIMATES

By Ralph J. Brown

INTRODUCTION

The Bureau of Economic Analysis of the U.S. Department of Commerce now provides annual estimates of gross state product (GSP) by component and by industry.[1] The years 1963-86 are currently available for each of the 50 states and the District of Columbia. This article discusses the estimates, how they are derived, and trends of GSP for South Dakota, surrounding states and the nation.

GSP is the gross market value of goods and services attributable to labor and property located in a state. It is analogous to gross domestic product (GDP) at the national level[2] and is the most comprehensive measure of production activity by state. These estimates which are provided for 61 industries are composed of four components for each industry: (1) compensation of employees, (2) proprietors' income, (3) indirect business tax and nontax liability, and (4) other, mainly capital-related charges.

GSP product is available in both current and constant dollars. According to the Department of Commerce:

> Current-dollar GSP estimates reflect changes in the command over resources associated with production and are particularly useful for analyzing the differential regional effects of large changes in relative output prices, such as the changes in energy and agricultural prices in the 1970's and 1980's.

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About the author:

Ralph J. Brown, Ph.D., is Professor of Economics at the School of Business, The University of South Dakota, Vermillion, South Dakota.

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TREND OF BUSINESS

By Nancy Palmer

In a world of ever-changing estimates, revised estimates, preliminary actuals and revised actuals, the following is the most recent data available to gauge the national economy's performance during 1988. All economic forecasts currently available for 1989 may need some revision. At this writing, it has just been announced that the Consumer Price Index (CPI) rose 0.6 percent in January which, if annualized, would amount to 7.2 percent for 1989 if January's trend continued throughout the year. That monthly rate is the highest since January of 1987 when inflation shot up 0.7 percent, but slowed significantly during the remainder of the year. The Wholesale Price Index also jumped 1 percent in January which translates into an annual rate of 12.7 percent should January prove to be representative of what 1989 will bring. Those price increases prompted major banks to hike their prime lending rate twice during February and, during the last full week of the month, the Federal Reserve upped the discount rate, that interest rate which banks are charged for short-term loans.

Real Gross National Product (GNP) grew at an estimated 2.0 percent rate from the 3rd to the 4th quarter of 1988. Growth in that period was the slowest of 1988's four quarters. The average annual rate of real GNP growth for the year just completed was 2.7 percent. The U.S. Department of Commerce estimated that the drought of 1988 shaved three-quarters of a percent off the real GNP growth for the year. A variety of economic pundits have predicted that real GNP growth for 1989 will parallel 1988's growth with GNP increasing at a rate of approximately 2.7 percent. The estimated rates of growth predicted for 1990 vary, but most economists foresee a much slower rate of growth at less than 2 percent. These estimates were released in early February, prior to the increases in the CPI and prime interest rate which occurred near the end of the month.

Inflation for 1988, as measured by the CPI, increased at an average annual rate of 4.2 percent during 1988. Preliminary data for the 4th quarter put it 4.2 percent ahead of the inflation rate for the same period in 1987. For 1988, the rate of increase for the CPI increased somewhat in the 1st quarter, topped out in the 2nd and 3rd quarters and dropped again in the 4th quarter. The current estimates for inflation during 1989 hover at around 4.7 percent. Again, these estimates were made prior to the late February release of January's CPI and the increase in the prime rate.

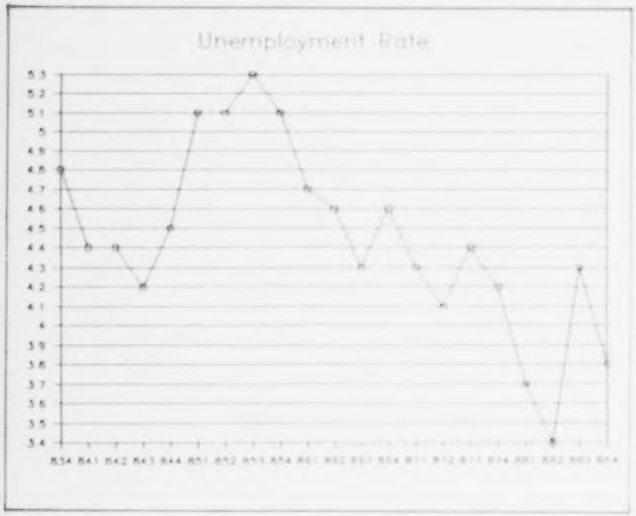
Total personal income in the U.S. was up 7.6 percent from the 4th quarter of 1987 to the 4th quarter of 1988. Nationally, farm proprietor's income dropped nearly 15 percent (14.8%) from the end of 1987 to the end of 1988, when seasonally adjusted. Americans' disposable personal income (DPI) increased at an average annual rate of 3.8 percent during 1988. DPI posted strong gains in all periods except the 2nd quarter, when it remained unchanged from the previous quarter. Personal savings as a percent of

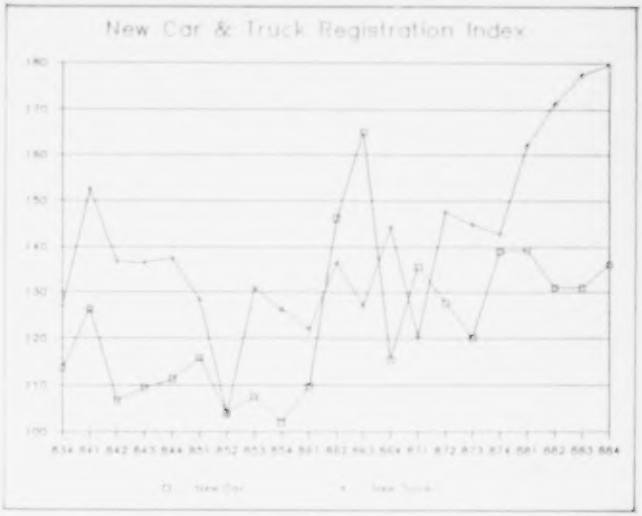
Continued on page 4.

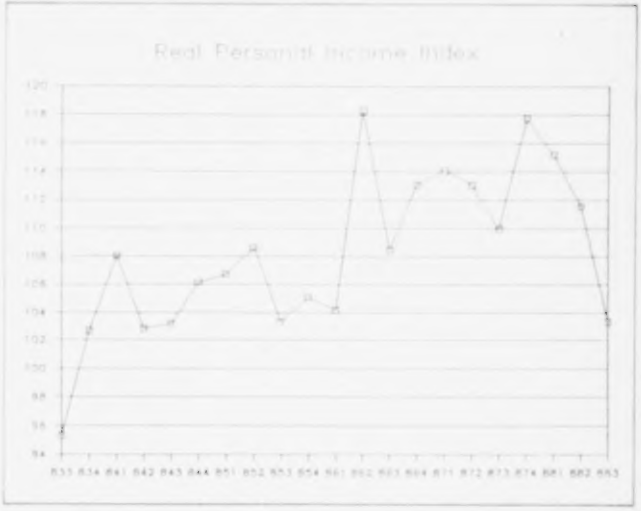
SOUTH DAKOTA BUSINESS & ECONOMIC INDICES

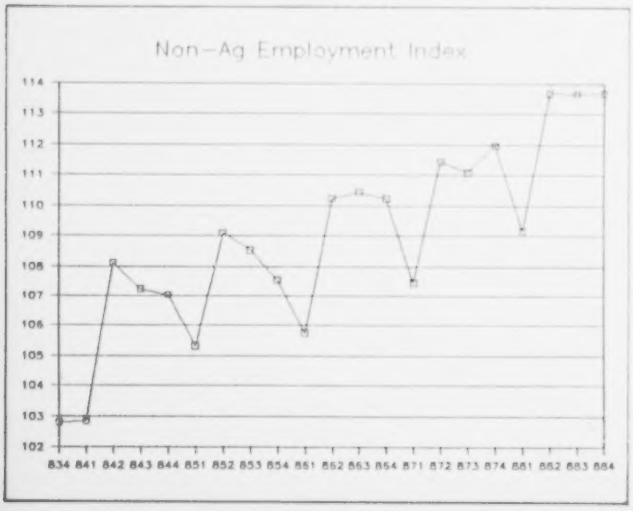
Quarterly Data 1983-1988

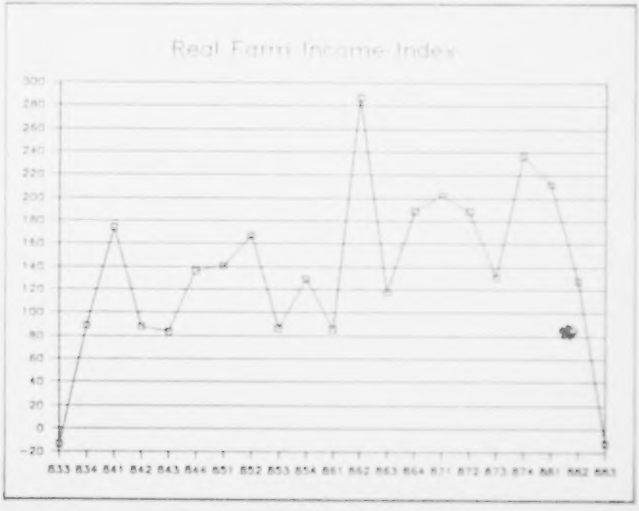
Adjusted for Seasonal Variation











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disposable personal income rose to 4.2 percent during 1988, its highest level since 1985. Personal savings as a percent of DPI are expected to increase slightly in 1989 and 1990.

The nation's unemployment rate dropped slightly from the 3rd to the 4th quarter of 1988. The 5.1 percent unemployment rate for the 4th quarter was the lowest during 1988, and puts the average annual unemployment rate for the year at 5.4 percent. As with the other indicators, no wide swings in the unemployment rate were initially predicted for 1989. Total employment for the last quarter of 1988 was 2.1 percent above total employment in the same period of 1987. Non-agricultural employment was up 3.2 percent from the 4th quarter of 1987 to the 4th quarter of 1988.

In its latest edition of *U.S. Industrial Outlook*, the Department of Commerce estimates that the constant dollar value of new construction will decline slightly, with an increase in maintenance and repair expenditures in 1989. Housing starts are expected to decline as are starts for commercial construction. Nationally, employment in the construction industry rose 0.4 percent to a record 5.1 million employees in 1988. Housing starts may be further slowed by the recent increases in interest rates. Homeowners who opted for riskier adjustable rate mortgages in order to get into their first homes or move into better ones will begin to feel the crunch first as interest rates climb. The average 30-year mortgage rose to 10.56 percent compared to 9.84 percent one year ago, after the Federal Reserve and major banks finished hiking the discount and prime rates at the end of February. Since 1979, the rate of home ownership in the 25-29 age bracket dropped from 44 percent to 36 percent. For those in the "thirtysomething" category, the rate slowed from 61 percent to 53 percent.

South Dakota's Economy

On a seasonally adjusted basis, unemployment in South Dakota continued to drop in late 1988, decreasing from 4.3 percent in the 3rd quarter to 3.8 percent in the 4th quarter. For the year, unemployment was its lowest during the second quarter and the average unemployment rate in the state was 3.8 percent, nearly two percentage points below the average national rate. Non-agricultural employment remained unchanged from the 3rd to the 4th quarters of 1988, on a seasonally adjusted basis. Non-agricultural employment increased 1.5 percent from the 4th quarter of 1987 to 1988. Construction employment continued its slight decline from the 3rd to the 4th quarters of 1988. Seasonally adjusted, construction employment at the end of 1988 was less than one percent below that during the same time period one year ago.

Dramatic decreases in farm income continue to pull down the state's level of total personal income. Personal income declined for the second consecutive quarter, down 7.3 percent from the 2nd to the 3rd quarters of 1988, on a seasonally adjusted basis. Personal income for the third quarter of 1988 was 2 percent below that during the same time period in 1987. For the third consecutive quarter, seasonally adjusted farm income continued its dive into the 3rd quarter of 1988. For the first time since 1983, farm income fell into the negative numbers, dropping 110 percent from the 2nd to the 3rd quarters of 1988. Farm income for the first 3 quarters of 1988 is 37 percent below that of the first three quarters of 1987.

Although the increase slowed to 1.1 percent from the 3rd to the 4th quarters of 1988, registrations of new trucks skyrocketed last year. On a seasonally adjusted basis, sales of new trucks during the last quarter of 1988 were 25.8 percent ahead of those during the same time period in 1987. In total, new truck sales in 1988 outpaced 1987 sales by 24 percent. And, while increasing somewhat, sales of new cars took no dramatic turns from 1987 to 1988. Seasonally adjusted, new car sales increased 3.8 percent from the 3rd to the 4th quarter of 1988, but were 2 percent below sales for the 4th quarter of last year. In total, sales of new cars in 1988 increased 2.9 percent over sales in 1987.

In South Dakota, construction employment fell approximately 3 percent from 1987 to 1988. And, while the unadjusted dollar amount of new residential construction remained relatively unchanged from 1987 to 1988 (up eight-tenths of one percent), the number of new single family homes reported in 1988 dropped 17 percent from the number reported in 1987. The bulge in the new residential construction market is in the multi-family housing category. The number of dwellings constructed to house 3 to 4 families jumped 83 percent from 1987 to 1988 while the number of dwellings constructed to house 5 or more families increased 22 percent. The unadjusted dollar values of the dwellings in those two categories rose 109 percent and 32 percent, thus keeping the overall value of new housing starts in the state relatively unchanged.

Nancy Palmer is an Administrative Assistant at the Business Research Bureau, The University of South Dakota, Vermillion, South Dakota.

Continued from page 1.

> Constant-dollar GSP estimates reflect changes in the physical volume of production and are particularly useful for comparing regional trends in labor productivity or for projecting the volume of industrial output.[3]

Constant-dollar estimates are calculated using national price deflators by industry.

GROSS STATE PRODUCT BY STATE

GSP by Size

The level of GSP, per capita GSP, and GSP per employed person for each state and the nation in 1986 is presented in Table 1. In terms of total GSP, California ranked number one with a GSP that is larger than most countries. Its GSP is 12.6 percent of GDP. New York ranked second and Texas ranked third in GSP size. The South Dakota economy ranked 50th, while Vermont ranked 51st in total GSP.

GSP Per Capita

GSP per capita provides a better measure of economic well-being per person. Washington, D.C. ranked first with GSP per capita of $37,891 or 248 percent of the U.S. average. This reflects a large number of government and government-related production in a very small geographic area. Alaska and Wyoming, both sparsely populated states, ranked second and third, respectively. Of the more populated states, Connecticut ranked fourth overall and Massachusetts ranked fifth. South Dakota ranked 45th with a per capita GSP that is 81 percent of the national average. Mississippi ranked 51st with a GSP per capita of 70 percent

of the U.S. average. California, which was first in total GSP, ranked 8th in per capita GSP.

GSP Per Employed Person

GSP per employed person was computed by dividing real GSP in each state by the number of employed persons. This includes full-time and part-time workers as well as self-employed and wage and salary workers. This measures output per worker and is a rough measure of productivity per worker.[4] Obviously, GSP per employed person will vary widely between states due to differences in capital/labor ratios, differences in human capital per worker due to education and training differences, industry mix, etc.

Alaska ranked first with a GSP per employed person which was 251 percent of the national average. Washington, D.C. was second and Wyoming was third. South Dakota ranked 50th with a GSP per employed person which was 79 percent of the national average. Only South Carolina ranked lower with a GSP per employed person which was 78 percent of the national average.

TABLE 1: GSP MEASURE BY STATE, 1986

	(1) GSP 1982 $'S	(2) PERCENT OF US	(3) GSP PER CAPITA	(4) PERCENT OF US	(5) GSP PER EMPLOYED	(6) PERCENT OF US
UNITED STATES	$3,681,144	100.00%	$15,268	100.00%	$33,588	100.00%
ALABAMA	48,409	1.32%	11,953	78.28%	28,526	84.93%
ALASKA	19,325	0.52%	36,325	237.91%	84,389	251.25%
ARIZONA	46,058	1.25%	14,046	92.00%	31,205	92.90%
ARKANSAS	28,168	0.77%	11,880	77.81%	28,772	85.66%
CALIFORNIA	464,550	12.62%	17,205	112.68%	37,244	110.89%
COLORADO	51,781	1.41%	15,855	103.84%	33,024	98.32%
CONNECTICUT	61,750	1.68%	19,339	126.66%	36,888	109.82%
DC	23,682	0.64%	37,891	248.17%	78,417	233.47%
DELAWARE	10,072	0.27%	15,912	104.21%	32,386	96.42%
FLORIDA	152,269	4.14%	13,021	85.28%	27,056	80.55%
GEORGIA	88,827	2.41%	14,562	95.37%	31,321	93.25%
HAWAII	16,130	0.44%	15,146	99.20%	34,688	103.28%
IDAHO	11,672	0.32%	11,649	76.29%	27,335	81.38%
ILLINOIS	183,849	4.99%	15,916	104.24%	35,186	104.76%
INDIANA	75,924	2.06%	13,797	90.36%	29,600	88.13%
IOWA	40,425	1.10%	14,184	92.90%	30,349	90.36%
KANSAS	37,783	1.03%	15,365	100.63%	32,628	97.14%
KENTUCKY	47,502	1.29%	12,749	83.50%	30,986	92.25%
LOUISIANA	68,508	1.86%	15,227	99.73%	39,669	118.10%
MAINE	15,056	0.41%	12,846	84.14%	28,301	84.26%
MARYLAND	65,408	1.78%	14,662	96.03%	29,044	86.47%
MASSACHUSETTS	102,279	2.78%	17,532	114.82%	34,860	103.79%
MICHIGAN	136,433	3.71%	14,929	97.78%	34,049	101.37%
MINNESOTA	68,117	1.85%	16,168	105.89%	32,514	96.80%
MISSISSIPPI	27,987	0.76%	10,666	69.86%	27,251	81.13%
MISSOURI	72,629	1.97%	14,342	93.93%	30,594	91.08%
MONTANA	10,763	0.29%	13,174	86.28%	28,778	85.68%
NEBRASKA	23,673	0.64%	14,814	97.03%	31,026	92.37%
NEVADA	16,092	0.44%	16,641	108.99%	31,677	94.31%
NEW HAMPSHIRE	17,073	0.46%	16,624	108.88%	31,269	93.10%
NEW JERSEY	133,468	3.63%	17,504	114.64%	36,111	107.51%
NEW MEXICO	21,154	0.57%	14,303	93.68%	34,679	103.25%
NEW YORK	309,273	8.40%	17,330	113.83%	39,243	116.84%
NORTH CAROLINA	87,371	2.37%	13,801	90.39%	28,893	86.02%
NORTH DAKOTA	9,806	0.27%	14,442	94.59%	31,632	94.18%
OHIO	156,541	4.25%	14,565	95.39%	32,552	96.91%
OKLAHOMA	45,928	1.25%	13,892	90.99%	31,415	93.53%
OREGON	35,934	0.98%	13,299	87.10%	29,144	86.77%
PENNSYLVANIA	160,862	4.37%	13,525	88.58%	30,652	91.26%
RHODE ISLAND	13,283	0.36%	13,624	89.23%	27,108	80.71%
SOUTH CAROLINA	39,291	1.07%	11,621	76.11%	26,159	77.88%
SOUTH DAKOTA	8,760	0.24%	12,373	81.04%	26,626	79.27%
TENNESSEE	64,124	1.74%	13,359	87.50%	30,304	90.22%
TEXAS	276,313	7.51%	16,557	108.44%	37,174	110.68%
UTAH	21,193	0.58%	12,736	83.42%	29,891	88.99%
VERMONT	7,585	0.21%	14,020	91.83%	27,186	80.94%
VIRGINIA	88,171	2.40%	15,215	99.65%	32,179	95.81%
WASHINGTON	67,158	1.82%	15,048	98.55%	33,579	99.97%
WEST VIRGINIA	21,705	0.59%	11,322	74.16%	33,137	98.66%
WISCONSIN	70,171	1.91%	14,671	96.09%	31,467	93.68%
WYOMING	10,870	0.30%	21,440	140.42%	47,885	142.57%

The relationship between per capita personal income and GSP per capita for 1986 is shown in Figure 1. As shown in Figure 1, the relationship between per capita personal income and per capita GSP shows wide variations from state to state. The correlation between these two variables was 0.64. Both Alaska and District of Columbia were outliers which reduced the slope of the fitted regression line. The relationship between average wage and GSP per employee for 1986 is shown in Figure 2. As expected, there is a closer relationship between average wage and GSP per employee with a correlation of 0.80.

FIGURE 1: RELATIONSHIP BETWEEN PER CAPITA GSP AND INCOME

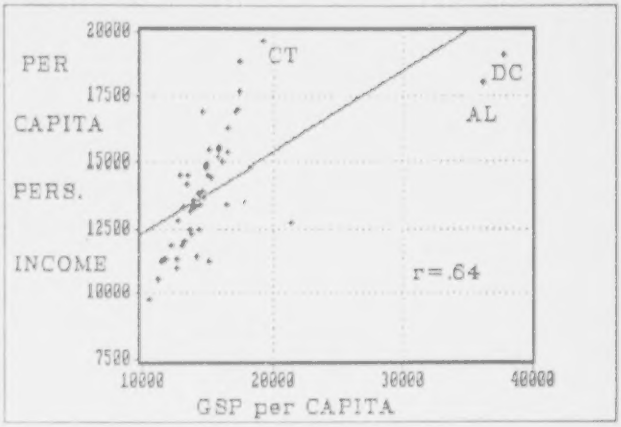
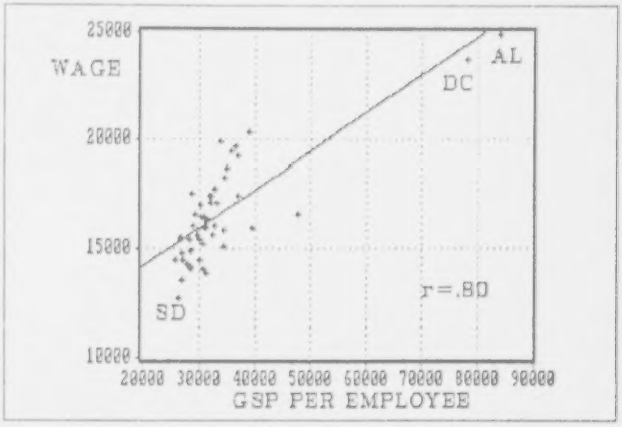


FIGURE 2: RELATIONSHIP BETWEEN PER CAPITA GSP AND WAGES



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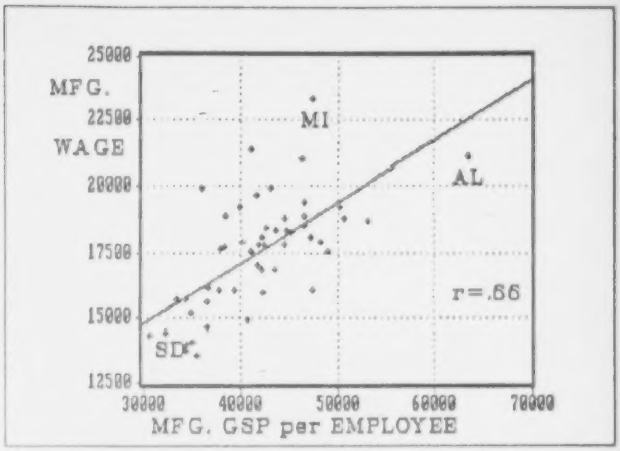
Manufacturing GSP

Manufacturing GSP and manufacturing GSP per manufacturing employee for 1986 is shown in Table 2. The manufacturing sector is of particular importance since many states are aggressively competing for manufacturing employment. Alaska had the highest manufacturing GSP per employee at $63,583. Washington, D.C. ranked second while Iowa ranked third. South Dakota ranked 46th with manufacturing output per employee at 81 percent of the national average. Once again it should be mentioned that differences in manufacturing GSP per employee reflect a variety of factors such as differences in the amount of capital per worker and in the amount of education and training per worker. See Figure 3 for the relationship between the average manufacturing wage and manufacturing GSP per employee.

TABLE 2: MANUFACTURING GSP, 1986

	GSP MAN'F (MIL's)	MAN'F EMPLOYMENT (000's)	GSP PER MAN'F EMPLOYEE	% OF US	STATE RANK
UNITED STATES	812,157	18,994	42,759	100.00%	
ALABAMA	12,351	358	34,500	80.69%	47
ALASKA	763	12	63,583	148.70%	1
ARIZONA	7,411	184	40,277	94.20%	32
ARKANSAS	7,454	212	35,160	82.23%	44
CALIFORNIA	96,290	2,064	46,652	109.11%	10
COLORADO	7,766	185	41,978	98.18%	26
CONNECTICUT	17,327	396	43,755	102.33%	18
DC	851	16	53,188	124.39%	2
DELAWARE	3,049	68	44,838	104.86%	15
FLORIDA	18,960	517	36,673	85.77%	41
GEORGIA	19,814	565	35,069	82.02%	45
HAWAII	811	22	36,864	86.21%	39
IDAHO	2,142	52	41,192	96.34%	30
ILLINOIS	43,153	925	46,652	109.11%	11
INDIANA	25,163	603	41,730	97.59%	28
IOWA	10,199	201	50,741	118.67%	3
KANSAS	7,562	175	43,211	101.06%	20
KENTUCKY	12,218	253	48,292	112.94%	6
LOUISIANA	8,412	167	50,371	117.80%	4
MAINE	3,497	104	33,625	78.64%	49
MARYLAND	8,876	210	42,267	98.85%	24
MASSACHUSETTS	27,036	619	43,677	102.15%	19
MICHIGAN	47,408	998	47,503	111.10%	7
MINNESOTA	17,210	369	46,640	109.08%	12
MISSISSIPPI	7,948	223	35,641	83.35%	43
MISSOURI	17,941	422	42,514	99.43%	22
MONTANA	759	21	36,143	84.53%	42
NEBRASKA	3,633	86	42,244	98.80%	25
NEVADA	921	22	41,864	97.91%	27
NEW HAMPSHIRE	5,604	118	47,492	111.07%	8
NEW JERSEY	29,603	693	42,717	99.90%	21
NEW MEXICO	1,610	38	42,368	99.09%	23
NEW YORK	59,169	1,251	47,297	110.61%	9
NORTH CAROLINA	28,658	832	34,445	80.56%	48
NORTH DAKOTA	613	15	40,867	95.58%	31
OHIO	51,438	1,109	46,382	108.47%	13
OKLAHOMA	7,278	163	44,650	104.42%	16
OREGON	7,892	197	40,061	93.69%	33
PENNSYLVANIA	40,350	1,049	38,465	89.96%	36
RHODE ISLAND	3,669	119	30,832	72.11%	51
SOUTH CAROLINA	11,795	364	32,404	75.78%	50
SOUTH DAKOTA	969	28	34,607	80.94%	46
TENNESSEE	18,058	492	36,703	85.84%	40
TEXAS	47,189	960	49,155	114.96%	5
UTAH	4,166	92	45,283	105.90%	14
VERMONT	1,976	50	39,520	92.43%	34
VIRGINIA	16,097	424	37,965	88.79%	38
WASHINGTON	12,530	304	41,217	96.39%	29
WEST VIRGINIA	3,357	87	38,586	90.24%	35
WISCONSIN	22,905	513	44,649	104.42%	17
WYOMING	304	8	38,000	88.87%	37

FIGURE 3: RELATIONSHIP BETWEEN MFG GSP AND WAGES



GROSS STATE PRODUCT TRENDS IN SOUTH DAKOTA, SURROUNDING STATES, AND THE NATION

Average annual growth rates of *real per capita* GSP for surrounding states and the nation over the selected time periods are shown in Table 3. As shown in Table 3, real per capita GSP for South Dakota grew more rapidly than real per capita GDP (nation) for every time period except the more recent 1980-86 period. The declining farm situation is the main reason for the poor relative performance of the South Dakota economy during this period. Of the surrounding states, Minnesota was the only state that grew faster than the nation during each of these time periods.

Comparison of South Dakota per capita real GSP growth rates with surrounding states indicates that South Dakota grew more rapidly over the 1963-86 period than Montana and Wyoming and less rapidly than Minnesota. During the 1973-80 time period, the fast growing states were North Dakota, Nebraska, and Wyoming, while South Dakota was the slowest growing of the regional states. During the 1980-86 period, the energy-dependent states of Wyoming, Montana, and North Dakota showed negative real growth. Minnesota had the best performance during this time period.

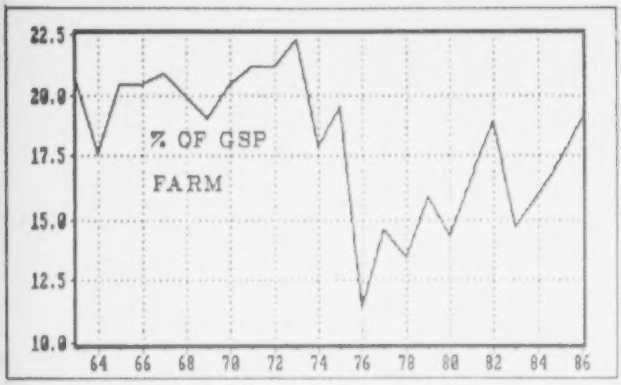
TABLE 3: REAL GSP PER CAPITA GROWTH RATES

State	1963-86	1963-73	1973-80	1980-86
South Dakota	2.2%	3.2%	1.3%	1.5%
Minnesota	2.5	3.1	1.5	2.8
North Dakota	2.3	1.2	6.2	-0.1
Montana	1.4	2.5	1.9	-1.1
Wyoming	0.5	1.7	2.6	-4.0
Nebraska	2.2	1.6	3.2	2.1
Iowa	2.1	2.7	1.8	1.0
United States	1.9	2.7	0.9	1.8

CHANGES IN COMPOSITION OF GSP

Over the 1963-86 period, the percent of GSP accounted for by the farm sector declined in South Dakota, while the importance of manufacturing increased. In the 1960's and first half of the 1970's, farming accounted for about 20 percent of South Dakota real GSP. In the 1980's, it accounted for approximately 16 percent of real GSP (See Figure 4).

FIGURE 4: PERCENT OF SD GSP IN FARMING



GSP shares by industry for South Dakota and the nation in 1963 and 1986 are presented in Table 4. During the 1960's and early 1970's, manufacturing accounted for approximately 4 to 5 percent of GSP. However, this share increased to 11 percent of GSP by 1986. Over the 1963-86 time period, manufacturing output in South Dakota grew at an annual rate of 6.0 percent per year compared to 3.2 percent per year for the nation. In South Dakota, the agricultural services, mining, and wholesale and retail trade sectors showed little change in shares over the 1963-86 period. Construction showed a large decline from 11.8 percent in 1963 to 3.6 percent in 1986. This undoubtedly reflects the large level of construction employment associated with the construction of the Oahe Dam in the early 1960's. Other industries showing some growth in relative shares over this time period were transportation, communication, and utilities; finance, insurance, and real estate; and services. The government share of GSP declined over this time period.

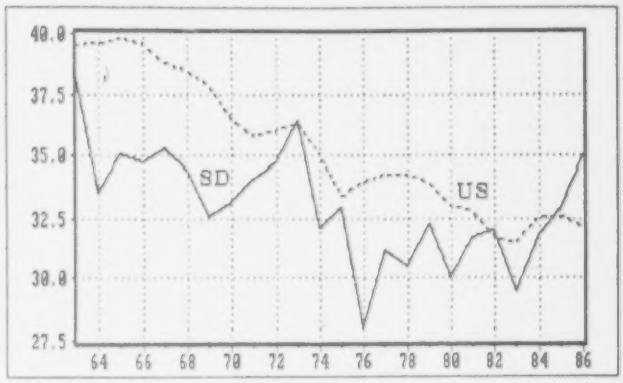
TABLE 4: INDUSTRY SHARES OF OUTPUT, SD AND US

Industry	1963		1986	
	SD	US	SD	US
Farm	20.5%	3.2%	19.0%	2.3%
Ag., Srv. & Fish	0.8	0.4	0.6	0.4
Mining	1.0	5.5	1.3	3.2
Construction	11.8	9.5	3.6	4.6
Manufacturing	4.7	21.3	11.1	22.1
Tran. Comm. & Util	7.4	7.7	9.0	8.9
Wholesale/Retail	16.2	14.7	17.0	17.5
Fin. Insur. & R.E.	13.8	12.7	15.4	15.0
Service	9.2	11.7	12.4	15.3
Government	14.6	13.3	10.7	10.7

In comparison to the nation, South Dakota is much more dependent on the farm sector with 19 percent of GSP from farming in 1986 as compared to 2.3 percent for the nation. Manufacturing accounts for only 11 percent of South Dakota output, while this share is 22 percent for the nation. Other areas where there are differences in the composition of output between South Dakota and the nation are mining and services, while in other sectors the industry output shares are almost identical.

The growing trend toward a more service-oriented economy nationally is also apparent in South Dakota. As shown in Figure 5, the share of GSP accounted for by goods-producing industries declined in both South Dakota and for the nation.[5] The composition of goods-producing industries differs greatly between South Dakota and the nation. In South Dakota, the major goods-producing industry is farming which accounted for 16 to 20 percent of GSP over this time, while for the nation the major goods-producing industry was manufacturing which accounted for approximately 22 percent of GDP. Note that South Dakota's goods-producing industries are much more volatile due to the variability of farm output.

FIGURE 5: PERCENT OF SD AND US IN GOODS-PRODUCING INDUSTRY OUTPUT



HISTORICAL TRENDS: SOUTH DAKOTA AND THE NATION

The trend of real per capita GSP for South Dakota and for the nation is shown in Figure 6. As shown in Figure 6, South Dakota real per capita GSP is lower than real per capita GDP for the nation throughout the 1963-86 time period. However, there has been some convergence with the ratio of per capita South Dakota GSP to per capita GDP rising from 0.77 in 1963 to 0.85 in 1975 and 0.81 in 1986. A comparison of growth rates in per capita GSP and GDP is shown in Figure 7.

FIGURE 6: TRENDS OF REAL PER CAPITA GSP AND GDP

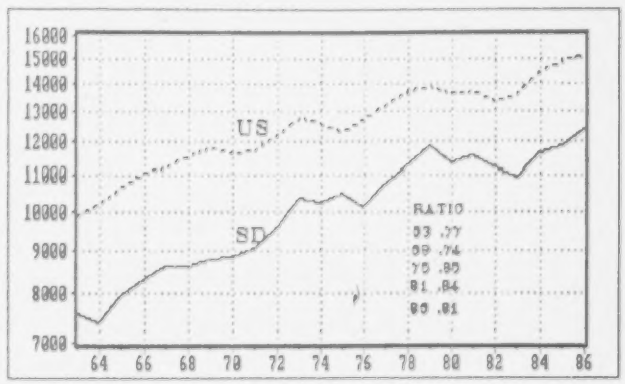


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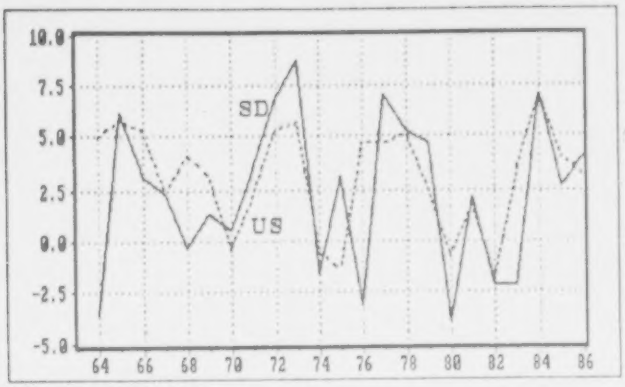
FIGURE 7: PERCENTAGE CHANGE IN SD GSP AND US GDP



Examination of the short-run and long-run elasticities of South Dakota GSP with respect to U.S. GDP provides some interesting results. The reader is reminded that the data shown here is not on a per capita basis. The elasticities show the responsiveness of South Dakota GSP by industry to expansions in the same industry at the national level. The short-run elasticity shows the one-year response while the long-run elasticity shows the total response over a period of years. An elasticity coefficient less than one indicates that South Dakota expands at a slower rate than the nation, while an elasticity coefficient greater than one shows that South Dakota expands at a faster rate than the nation. As shown in Table 5, overall GSP expands at a slower rate than the nation in both the short- and long-run. In fact, this was true in every industry except manufacturing. In manufacturing the short-run elasticity coefficient was one which means a 10 percent expansion nationally would be paralleled by the same expansion in South Dakota. In the long-run a 10 percent expansion nationally would lead to 29.4 percent expansion in South Dakota manufacturing output. This indicates that South Dakota would experience an increase in manufacturing output share.

TABLE 5: ELASTICITIES OF GSP TO GDP BY INDUSTRY.

Industry	Short-Run Elasticity	Long-Run Elasticity
GSP	0.57	0.90
Farm	0.83	0.95
Mining	-0.13	0.34
Construction	0.31	0.74
Manufacturing	1.00	2.94
Tran. Comm. & Util	0.62	0.83
Wholesale	0.12	0.75
Retail	0.24	0.62
Fin. Insur. & R.E.	0.24	0.96
Service	0.04	0.40
Government	0.02	0.11

SUMMARY AND CONCLUSIONS

The introduction of new gross state product estimates by state and the District of Columbia provides analysts with a wealth of data for analyzing trends and differences between state economies.

Examination of this data indicates that the largest state economy is California and the smallest is Vermont. South Dakota ranked 50th. On a per capita basis, the District of Columbia ranks first and Mississippi ranks last. South Dakota ranked 45th with a per capita GSP of 81 percent of the national average. In terms of GSP per employed person, Alaska ranked first, while South Dakota ranked 50th at 79 percent of the national average. State-by-state data on manufacturing GSP per employee indicates that Alaska ranked first and South Dakota ranked 46th.

Comparisons of GSP per capita growth trends over the 1963-86 period shows South Dakota growing more rapidly than the nation except in the 1980's. Minnesota outperformed the nation in every time period since 1963. The energy-dependent states of North Dakota, Montana, and Wyoming showed negative growth in the 1980's.

Changes in the composition of the South Dakota economy occurred over the 1963-86 period. The percentage of GSP accounted for by the farm sector declined, while the importance of manufacturing increased. Consistent with national trends, the share of GSP in South Dakota accounted for by service industries increased over the 1963-86 period.

Examination of historical trends shows that over the 1963-86 time period South Dakota GSP per capita was always lower than GDP per capita. However, over this same period of time South Dakota GSP grew more rapidly than GDP per capita which led to some convergence of these variables. In 1963, South Dakota's per capita GSP was 77 percent of the per capita GDP and by 1986 this ratio rose to 81 percent.

[1]Vernon Renshaw, Edward A. Trott, Jr., and Howard Friedenberg, "Gross State Product by Industry, 1963-86," *Survey of Current Business*, May 1988, pp. 30-46.

[2]GDP is Gross National Product (GNP) less imports.

[3]Renshaw, Trott, Jr., and Friedenberg, p. 30.

[4]A better measure would be output per hour, but total hours worked data is not available at the state level.

[5]Goods-producing industries are defined as farming, agricultural services, forestry, and fisheries, mining, manufacturing, and construction.

TAXABLE SALES
Counties and Selected Cities in South Dakota
Jan.-Dec. 1987 and 1988
(In $000's)

REGION I

	Jan.-Dec. 1987	Jan.-Dec. 1988	% Change
Brookings	120,336	132,845	10.4
Brookings	110,753	122,792	10.9
Elkton	2,146	2,123	-1.2
Volga	3,969	4,098	3.3
Clark	10,326	10,794	4.5
Clark	7,954	8,302	4.4
Codington	174,866	191,463	9.5
Watertown	169,700	185,888	9.5
Deuel	15,818	17,358	9.7
Clear Lake	13,581	15,099	11.1

	Jan.-Dec. 1987	Jan.-Dec. 1988	% Change
Gary	1,248	1,314	5.3
Toronto	1,594	1,606	0.8
Grant	41,666	43,320	4.0
Big Stone C.	3,150	3,574	13.5
Milbank	36,264	37,270	2.8
Hamlin	13,002	13,833	6.4
Bryant	3,121	3,061	-1.9
Castlewood	1,478	1,609	8.9
Estelline	3,209	3,499	9.0
Hayti	2,420	2,779	14.8
Lake Norden	1,023	1,017	-0.6

	Jan.-Dec. 1987	Jan.-Dec. 1988	% Change
Kingsbury	21,591	21,848	1.2
Arlington	5,924	5,773	-2.5
De Smet	9,924	10,141	2.2
Lake Preston	3,244	3,358	3.5
Lake	47,385	52,406	10.6
Madison	44,049	48,800	10.8
Miner	10,536	10,333	-1.9
Howard	8,346	8,151	-2.3
Moody	27,527	29,132	5.8
Colman	16,674	17,904	7.4
Flandreau	9,772	10,028	2.6
TOTAL	483,053	523,332	8.3

REGION II

	Jan.-Dec. 1987	Jan.-Dec. 1988	% Change
Clay	49,930	53,584	7.3
Vermillion	48,561	48,119	-0.9
Lincoln	37,586	43,415	15.5
Canton	14,847	16,426	10.5
Lennox	7,436	8,260	11.1
McCook	17,927	18,715	4.4
Bridgewater	2,536	2,598	1.4
Canistota	1,860	1,917	3.1
Salem	9,879	10,810	9.4

	Jan.-Dec. 1987	Jan.-Dec. 1988	% Change
Minnehaha	1,064,506	1,161,292	9.1
Baltic	2,403	2,759	14.8
Brandon	7,999	8,980	12.3
Colton	3,008	3,050	1.4
Dell Rapids	10,825	11,594	7.1
Garretson	4,830	5,331	10.4
Hartford	2,837	3,192	12.5
Sioux Falls	1,005,720	1,097,145	9.1
Turner	23,040	24,537	6.5

	Jan.-Dec. 1987	Jan.-Dec. 1988	% Change
Centerville	3,192	3,219	0.8
Marion	8,881	9,421	6.1
Parker	3,800	3,926	3.3
Union	30,418	32,758	7.7
Alcester	8,132	7,924	-2.6
Beresford	10,248	11,276	10.0
Elk Point	6,181	6,378	3.2
TOTAL	1,223,107	1,334,401	9.1

REGION III

	Jan.-Dec. 1987	Jan.-Dec. 1988	% Change
Aurora	11,511	11,985	4.1
Plankinton	7,565	7,881	4.2
Bon Homme	22,817	24,251	6.3
Avon	4,619	4,705	1.9
Scotland	4,201	4,453	6.0
Springfield	3,439	3,577	4.0
Tabor	4,196	4,901	11.5
Tyndall	5,861	6,357	8.1
Brule	26,266	28,326	7.8
Chamberlain	20,825	22,843	9.7
Kimball	4,706	4,950	3.1
Charles Mix	33,380	35,221	5.5
Geddes	988	1,016	2.8

	Jan.-Dec. 1987	Jan.-Dec. 1988	% Change
Lake Andes	5,028	5,487	9.1
Platte	14,680	16,204	10.4
Wagner	11,622	12,275	5.6
Davison	139,898	151,183	8.1
Mitchell	137,375	148,052	7.8
Douglas	11,508	12,429	8.0
Armour	5,260	5,670	7.8
Corsica	4,467	5,181	16.0
Gregory	21,081	22,615	7.3
Burke	5,092	5,238	2.9
Gregory	10,840	11,850	9.3
Hanson	5,297	5,406	2.1
Alexandria	3,178	3,410	7.3

	Jan.-Dec. 1987	Jan.-Dec. 1988	% Change
Emery	1,573	1,608	2.2
Hutchinson	33,616	34,931	3.9
Freeman	13,312	13,762	3.4
Menno	5,037	5,125	1.7
Parkston	10,423	11,282	8.2
Tripp	2,921	3,073	5.2
Jerauld	8,140	8,382	3.0
Wess. Sprgs.	7,154	7,413	3.6
Sanborn	5,270	6,008	14.0
Woonsocket	3,955	4,306	8.9
Yankton	124,320	134,288	8.0
Yankton	119,957	128,557	7.2
TOTAL	443,104	476,035	7.4

REGION IV

	Jan.-Dec. 1987	Jan.-Dec. 1988	% Change
Beadle	117,797	116,920	-0.7
Huron	111,879	111,223	-0.6
Brown	270,350	275,010	1.7
Aberdeen	253,133	256,375	1.3
Groton	6,824	7,029	3.0
Day	24,262	26,450	9.0
Bristol	1,230	1,284	4.4
Waubay	1,632	1,489	-8.8
Webster	19,137	21,485	12.3
Edmunds	14,373	14,021	-2.4

	Jan.-Dec. 1987	Jan.-Dec. 1988	% Change
Bowdle	2,955	3,231	9.3
Hosmer	1,626	1,366	-16.0
Ipswich	7,165	6,868	-4.1
Roscoe	2,142	2,116	-1.2
Faulk	8,661	8,825	1.7
Faulkton	6,246	6,324	1.2
Hand	23,467	20,032	-14.7
Miller	21,783	18,246	-16.2
McPherson	9,442	9,354	-0.9
Eureka	5,608	5,654	0.7

	Jan.-Dec. 1987	Jan.-Dec. 1988	% Change
Leola	2,443	2,340	-4.2
Marshall	15,690	16,796	7.0
Britton	10,759	10,537	-2.1
Roberts	27,797	29,716	6.9
Sisseton	16,732	19,053	7.9
Wilmot	3,666	3,962	8.1
Spink	26,911	28,082	4.4
Doland	1,251	1,165	-6.9
Redfield	22,180	23,251	4.8
TOTAL	536,790	545,206	1.2

REGION V

	Jan.-Dec. 1987	Jan.-Dec. 1988	% Change
Buffalo	129	142	10.1
Campbell	6,584	6,305	-4.2
Herreid	3,397	3,362	-1.0
Pollock	2,761	2,490	-9.8
Corson	3,113	3,241	4.1
McIntosh	851	824	-3.2
McLaughlin	1,135	1,269	11.8
Dewey	13,835	14,312	3.6
Eagle Butte	8,779	9,239	5.2
Isabel	1,712	1,647	-3.8
Timber Lake	2,464	2,561	3.9
Haakon	12,198	12,431	1.9
Philip	11,084	11,200	1.0
Hughes	106,236	117,022	8.1

	Jan.-Dec. 1987	Jan.-Dec. 1988	% Change
Blunt	2,950	2,719	-7.8
Pierre	104,249	112,848	8.2
Hyde	8,090	8,429	4.2
Highmore	7,923	8,276	4.5
Jones	11,901	12,484	4.9
Murdo	10,952	11,543	5.4
Lyman	13,491	13,714	1.7
Oacoma	5,944	6,302	6.0
Presho	3,686	3,378	-8.4
Mellette	3,071	3,241	5.5
White River	2,711	2,801	3.3
Perkins	18,523	18,875	1.9
Lemmon	14,548	14,629	0.6
Potter	15,244	15,001	-1.6
Gettysburg	11,228	11,151	-0.7
Hoven	3,460	3,357	-3.0

	Jan.-Dec. 1987	Jan.-Dec. 1988	% Change
Stanley	15,496	15,873	2.4
Ft. Pierre	15,356	15,729	2.4
Sully	5,888	6,299	7.0
Onida	5,123	5,242	2.3
Tripp	38,348	41,226	7.5
Winner	37,144	39,934	7.5
Todd	9,310	10,051	8.0
Mission	8,367	8,925	6.7
Walworth	39,186	39,878	1.8
Mobridge	29,607	31,770	7.3
Selby	6,901	6,809	-1.3
Ziebach	2,077	1,999	-3.8
Dupree	1,992	1,921	-3.6
TOTAL	324,722	340,543	4.9

REGION VI

	Jan.-Dec. 1987	Jan.-Dec. 1988	% Change
Bennett	10,749	12,180	13.3
Martin	10,524	11,990	13.9
Butte	38,738	39,470	1.9
Belle Fche.	32,606	33,102	1.5
Newell	5,510	5,707	3.6
Custer	30,247	29,823	-1.4
Custer	28,210	27,656	-2.0
Fall River	29,202	30,496	4.4
Edgemont	5,051	5,157	2.1
Hot Sprgs.	23,409	24,632	5.2

	Jan.-Dec. 1987	Jan.-Dec. 1988	% Change
Harding	3,183	3,453	8.5
Buffalo	2,657	2,910	9.5
Jackson	9,194	9,143	-0.6
Kadoka	6,407	6,525	1.8
Lawrence	116,307	132,691	14.1
Deadwood	25,448	26,097	2.6
Lead	28,962	38,470	32.8
Spearfish	57,952	63,114	8.9
Whitewood	3,196	4,052	26.8

	Jan.-Dec. 1987	Jan.-Dec. 1988	% Change
Meade	52,009	56,257	8.2
Faith	5,506	5,718	3.9
Sturgis	37,833	40,269	6.4
Pennington	728,805	756,252	3.8
Rapid City	670,099	696,297	3.9
Wall	25,628	27,469	7.2
Shannon	4,192	3,882	-7.4
Pine Ridge	694	898	29.4
Washabaugh	176	405	130.1
TOTAL	1,022,802	1,074,052	5.0
STATE TOTAL	4,035,578	4,293,569	6.4

SOUTH DAKOTA INCOME AND EMPLOYMENT

TOTAL PERSONAL INCOME
United States, Plains Region and States
Third Quarter 1987--Third Quarter 1988
(Millions of Dollars, Seasonally Adjusted at Annual Rates)

	1987		1988			% Change
	3rd Qtr.	4th Qtr.	1st Qtr.	2nd Qtr.	3rd Qtr.	3rd Qtr. 1987 3rd Qtr. 1988
United States	3,785,589	3,901,510	3,923,680	4,003,546	4,074,838	7.6
Plains States	256,927	272,976	270,404	273,367	270,103	5.1
Iowa	38,623	43,613	41,720	40,687	39,268	1.7
Kansas	37,077	38,692	38,824	40,268	39,997	7.9
Minnesota	67,315	70,478	70,723	70,928	71,592	6.4
Missouri	75,043	77,263	77,164	78,944	79,776	6.3
Nebraska	21,944	24,610	23,452	24,218	23,198	5.7
North Dakota	8,277	8,960	9,250	9,219	7,748	-6.4
South Dakota	8,649	9,360	9,271	9,103	8,526	-1.4

Note: Detail may not add to totals because of rounding.

Source: U.S. Department of Commerce, Bureau of Economic Analysis.

SOUTH DAKOTA NONAGRICULTURAL WAGE AND SALARY EMPLOYMENT
December 1987 and December 1988
(In Thousands)

				Average Weekly Hours		Average Hourly Earnings	
	Dec. 1987	Dec. 1988	% Change	Dec. 1987	Dec. 1988	Dec. 1987	Dec. 1988
Total Employment	256.3	260.1	1.5				
Total Private	196.2	200.0	1.9	33.5	34.2	$7.30	$7.38
Mining	2.4	2.5	4.2	42.2	40.4	$12.57	$12.32
Construction	9.2	9.2	0.0	37.1	36.8	$9.59	$9.97
Manufacturing	29.8	29.4	-1.3	42.5	43.2	$8.16	$8.30
Durable Goods	16.6	16.1	-3.0				
Fabricated Metals & Mach.	10.4	9.8	-5.8				
Nondurable Goods	13.2	13.4	1.5				
Food & Kindred Products	7.6	7.8	2.6				
Paper, Printing & Publishing	2.8	2.7	-3.6				
Transportation & Pub. Utilities	12.4	13.0	4.8	38.7	39.7	$10.19	$10.34
Transportation	7.4	7.9	6.8				
Communication	2.7	2.9	7.4				
Electric/Gas/Sanitary Services	2.3	2.2	-4.3				
Wholesale & Retail Trade	67.3	68.7	2.1	31.7	31.7	$6.28	$6.14
Wholesale Trade	16.5	16.6	0.6				
Durable Goods	7.4	7.4	0.0				
Nondurable Goods	9.1	9.2	1.1				
Retail Trade	50.8	52.0	2.4				
Finance, Insurance & Real Estate	14.2	14.7	3.5	34.4	35.8	$7.24	$7.38
Services	60.9	62.6	2.8	29.6	31.2	$6.59	$6.83
Hotels, Amuse., Pers. & Business	16.1	16.5	2.5				
Medical & Health	23.6	24.3	3.0				
Educational	4.6	5.0	8.7				
Social	4.3	4.5	4.7				
Membership	9.0	8.8	-2.2				
Government	60.1	60.1	0.0				
Federal	10.8	10.7	-0.9				
State	16.3	16.3	0.0				
State Education	7.9	7.9	0.0				
Local	33.1	33.0	-0.3				
Local Education	19.6	19.7	0.5				

Source: South Dakota Department of Labor

For further information contact Nancy Nelson

SOUTH DAKOTA AGRICULTURAL INDICATORS

CROP PRODUCTION SUMMARY
SOUTH DAKOTA
January, 1989
(1,000'S)

Crop	Unit	Production 1986	Production 1987	1988	1988 as % of 1987
Wheat, All	Bu.	108,660	104,706	38,096	36
Winter	Bu.	57,600	55,080	21,190	39
Durum	Bu.	1,560	1,026	816	27
Other Spring	Bu.	49,500	48,600	15,600	32
Corn, Grain	Bu.	233,700	226,230	132,000	58
Corn, Silage	Tons	2,775	2,336	2,545	109
Sorghum, Grain	Bu.	14,030	14,310	11,000	77
Sorghum, Silage	Tons	455	365	816	224
Oats	Bu.	46,200	52,900	20,000	38
Barley	Bu.	35,910	34,000	8,100	24
Rye	Bu.	4,440	5,040	2,250	45
Flaxseed	Bu.	1,456	702	210	30
Potatoes (Fall)	Cwt.	2,520	2,310	1,600	69
Soybeans	Bu.	40,585	45,175	41,320	92
Hay, All	Tons	9,330	7,090	3,810	54
Alfalfa	Tons	5,250	5,170	2,315	45
All Other	Tons	3,080	1,920	1,495	83
Sunflowers, All	Lbs.	509,460	386,950	206,920	53
Oil	Lbs.	506,460	380,900	201,720	53
Non-oil	Lbs.	3,000	6,050	5,200	53

Source: South Dakota Crop & Livestock Reporter

PRICES RECEIVED BY FARMERS FOR COMMODITIES SOLD--SOUTH DAKOTA
DECEMBER 1987 AND 1988

		Base Period Price 1910-1914 Average	Dec. 1987	Dec. 1988	Dec. 1988 Price as % of Base	Dec. 1988 Price Above or Below Dec. 1987
Wheat	Bu.	0.850	2.60	3.60	424	38.5
Corn	Bu.	0.510	1.59	2.44	478	53.5
Oats	Bu.	0.350	1.82	2.24	640	23.1
Barley	Bu.	0.590	1.44	1.97	334	36.8
Flaxseed	Bu.	1.680	3.23	7.75	461	139.9
Milk, Whol.	Cwt.	1.820	1/	1/		
Eggs	Doz.	0.196	1/	1/		
Cattle	Cwt.	5.240	61.60	67.30	1284	9.3
Calves	Cwt.	6.080	89.90	96.00	1578	6.8
Hogs	Cwt.	7.070	40.80	40.00	566	-2.0
Sheep	Cwt.	4.240	33.60	31.50	743	-6.3
Lambs	Cwt.	5.660	80.80	73.80	1304	-8.7
Wool	Lb.	0.178	0.76	1.01	567	32.9

1/ Season average price only.

Source: South Dakota Crop & Livestock Reporter.

SOUTH DAKOTA LOCAL CONDITIONS INDICATORS

SOUTH DAKOTA LOCAL CONDITIONS INDICATORS
(% Change Like Period Previous Yr.)

City	Total	Taxable Sales/1 Retail	Taxable Sales/1 Services	Telephone Services/2	Housing Starts/3	Postal Indicator/4	Employment*/2
Aberdeen	3.8	.1	1.9	2.4	47.7	52.7	-4.0
Belle Fourche	4.7	2.7	11.5	2.6			-12.6
Brookings	14.7	7.4	13.2		-48.4	32.7	7.5
Canton	23.2	13.9	7.4	.7			-0.1
Chamberlain	21.5	18.3	12.2	3.4			-1.0
Deadwood	-2.6	1.8	45.2	2.1			5.6
De Smet	0.3	4.4	16.7	1.0			-16.2
Elk Point	-7.3	5.6	5.8	1.7			2.6
Hot Springs	-0.1	1.5	-14.6		0.0		-10.5
Huron	0.5	10.5	-25.4	1.7	-61.9	20.3	1.4
Lead	48.6	.0	18.1	1.7			5.6
Madison	11.0	12.7	39.8	1.8	-25.7		2.3
Milbank	13.8	6.9	5.6	.8			-4.1
Mitchell	15.5	8.2	11.3	2.1	-62.2	19.2	3.7
Mobridge	7.2	.2	12.6	1.2			-3.6
Pierre	7.2	3.9	15.3	1.7	-2.2	9.5	2.1
Rapid City	7.0	5.7	8.9	1.6	-31.3	30.5	-1.9
Sioux Falls	8.5	7.6	7.1	3.3	75.2	20.8	-3.9
Spearfish	11.6	7.9	-8.8		-23.7		5.6
Sturgis	13.6	12.7	-6.6	.8			3.6
Vermillion	8.0	10.9	1.1	1.9	-48.3		-0.3
Watertown	11.6	11.0	5.1	3.8	-28.7	22.8	3.7
Winner	11.4	13.9	5.1	1.7			1.7
Yankton	15.2	10.9	14.1	4.6	141.9	14.8	-1.6

*Based on County Data

1/Percentage change for Nov.-Dec. 1987 and 1988.

2/Percentage change for Dec., 1987 and 1988. Telephone data are for the number of access lines in service.

3/Percentage change for January-Dec. 1987 and 1988. Data reported for housing represent the value of housing starts.

4/Percentage change for the 4th quarter of 1987 and 1988. Included in postal indicators are: postage sales, postage meters for customers, meter imprint postage (3rd class regular),

SOUTH DAKOTA
Business Review

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SCHOOL OF BUSINESS - USD
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Bethesda, MD 20814-0000

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CONSUMER PRICE INDEX
United States
Jan.-Dec. 1988
(1982-1984=100)

Item	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Unadjusted % Change Jan.-Dec.
All Items	115.7	116.0	116.5	117.1	117.5	118.0	118.5	119.0	119.8	120.2	120.3	120.5	4.1
Food & beverages	115.7	115.8	116.0	116.7	117.1	117.6	118.8	119.4	120.1	120.3	120.2	120.6	4.2
Food	115.7	115.7	115.9	116.6	117.0	117.6	118.8	119.4	120.2	120.3	120.2	120.7	4.3
Alcoholic beverages	115.8	116.8	117.4	118.0	118.2	118.7	119.2	119.3	119.6	119.8	119.9	119.9	3.5
Housing	116.2	116.6	117.0	117.3	117.7	118.6	119.1	119.5	119.9	119.9	119.9	120.2	3.4
Shelter	124.6	125.0	125.6	125.8	126.2	126.6	127.4	128.2	128.4	128.9	129.1	129.3	3.8
Renters' costs	130.8	131.3	132.9	132.9	133.1	133.7	134.7	135.6	134.7	134.8	134.2	134.1	2.5
Homeowners'cost	128.5	129.0	129.2	129.4	129.9	130.4	131.0	131.8	132.6	133.1	133.8	134.0	4.3
Fuel & other utilities	102.4	102.8	102.7	102.8	103.5	105.9	106.0	106.1	106.4	105.4	104.3	105.0	2.5
Fuel	95.6	96.0	95.8	95.7	96.5	100.8	100.8	100.9	101.0	98.6	96.8	97.4	1.9
Fuel oil, coal & btld. gas	80.8	80.9	80.5	80.2	80.0	79.1	76.9	76.3	75.9	74.6	75.0	76.8	-5.0
Gas (piped) & electricity	101.5	101.9	101.7	101.6	102.6	107.8	108.1	108.3	108.5	105.8	103.7	104.1	2.6
Other util. & Pub. Services	121.3	121.8	121.7	122.3	122.6	122.3	122.4	122.6	123.3	124.5	124.4	125.5	3.5
Household furn. & operation	107.5	107.7	108.3	109.1	109.3	109.6	109.8	109.7	110.1	110.3	110.6	110.6	2.9
Apparel & upkeep	110.4	110.2	114.3	117.0	116.3	114.6	112.7	112.6	117.8	120.7	119.9	118.0	6.9
Transportation	107.1	106.8	106.5	107.2	108.1	108.5	108.9	109.6	109.7	110.0	110.7	110.8	3.5
Private transportation	106.0	105.7	105.4	106.0	107.0	107.4	107.8	108.6	108.6	109.0	109.6	109.6	3.4
Public transportation	121.8	120.8	121.4	122.4	122.4	123.2	123.7	123.7	124.0	124.2	125.3	126.5	3.9
Medical care	134.4	135.5	136.3	136.9	137.5	138.2	139.3	139.9	140.4	141.2	141.8	142.3	5.9
Entertainment	118.1	118.3	119.0	119.6	119.7	120.1	120.5	120.7	121.3	121.8	122.2	122.8	4.0
Other goods and services	133.4	134.2	134.6	134.8	135.1	135.5	136.5	137.5	140.0	140.6	141.0	141.3	5.9

•Consumer Price Index for all Urban Consumers
Source: Bureau of Labor Statistics, U.S. Dept. of Labor

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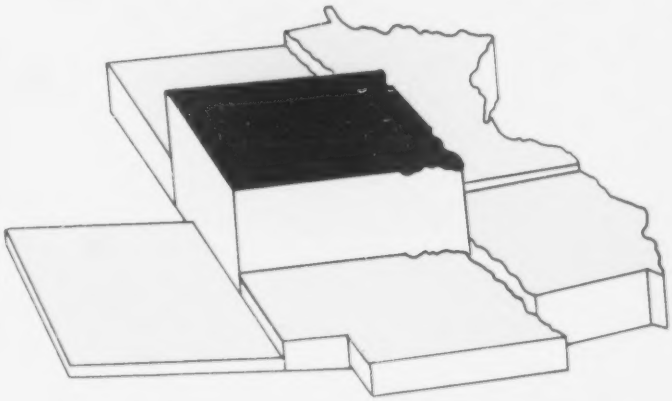

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General Indicators	Latest Quarter	SOUTH DAKOTA Latest Quarter	SOUTH DAKOTA Year Ago	SOUTH DAKOTA Percent Change	UNITED STATES Latest Quarter	UNITED STATES Year Ago	UNITED STATES Percent Change
Personal Income ($ Mil.)	1988-4	8,872	9,371	-5.3	4,172,895	3,902,016	6.9
Farm Prop. Income ($ Mil.)	1988-4	218	1,151	-81.1	23,793	44,728	-46.8
Non-ag Employment (Thous.)	1989-1	259	255	1.6	108,306	104,670	3.5
Unemployment Rate (%)	1989-1	4.5	4.3	4.7	5.6	6.1	-8.2
Total Employment (Thous.)	1989-1	335	335	0.0	115,218	112,489	2.4

Note: All U.S. data seasonally adjusted except for the unemployment rate and total employment. For South Dakota only personal income and farm proprietors' income are seasonally adjusted.

SMALL BUSINESSES MAY PREFER ALTERNATIVES TO ADVERTISING

By Faye McIntyre

Running a small business requires many talents, one of which is marketing. Although marketing and advertising are not synonymous terms, it is easy for business owners and managers to forget this when implementing a marketing program. Advertising is only one form of mass selling, with local newspaper and radio advertising comprising a large portion of small business marketing expenditures.

Other forms of promotion may, however, prove to be better marketing tools for many small businesses. Use of publicity and sales promotion can build goodwill among customers and can help increase sales in both the short run and long run. A better understanding of these two tools and some examples of practical applications can help

Continued on page 4.

About the Author: Faye McIntyre is Assistant Professor of Marketing at the School of Business, The University of South Dakota, Vermillion, SD.

PERSONAL INCOME 1987-1988

By Nancy Nelson and Toni Johnson

INTRODUCTION

The Bureau of Economic Analysis (BEA) recently released revised income data for the United States, regions, and states for the years 1958 through 1988. Similar information is also available on a county basis by major source for the years 1969 through 1987. Because of space limitations, this article contains only a detailed comparison of the sources of personal income on a statewide basis.

A summary of the county income data now available through the Business Research Bureau for the years 1969 through 1987 includes the following BEA reports:

1. total personal income by major source and earnings by major industry;
2. full-time and part-time employees by major industry;

Continued on page 6.

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D.E. Clement, Dean, School of Business

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TREND OF BUSINESS

The United States Economy

Growth in real Gross National Product (GNP) posted a sharp and unexpected annual rate increase of 5.5 percent in the first quarter of 1989 following a 2.5 percent fourth quarter gain. The increase in the fourth quarter of 1988 was 2.4 percent. Real GNP growth is 2.1 percent above the growth rate for the first quarter of last year. Following a weak first quarter, the economy appears to be gathering strength in other areas. The Index of Leading Indicators rose 0.8 percent in April following declines of 0.3 percent in February and 0.6 percent in March, while factory orders climbed 2.7 percent—their best showing since December. Leading the upswing in orders for goods from United States' factories is the rising demand for industrial products, suggesting that businesses are gathering confidence to continue expansion efforts. Of some concern, however, is inflation as measured by the Consumer Price Index (CPI) which rose 5.2 percent during the year ending in April 1989. This was well above the 3.8 percent gain during the 12 months ending April 1988. The United States' unemployment rate continues to fall, putting it at 5.2 percent of the civilian labor force for the first quarter of 1989. This is down from the 5.6 percent reported for the same time period a year ago. Total civilian employment increased 2.6 percent from the first quarter of 1988. Sales of domestic cars fell to 6.9 million units in the first quarter of 1989 from 7.5 million units in the previous quarter. Domestic truck sales were also down in the first quarter.

South Dakota's Economy

The state's seasonally adjusted unemployment rate has risen two-tenths of one percent from the fourth quarter of 1988. The current unemployment rate of 4.0 percent is slightly above the 3.8 percent rate for the same quarter a year ago. Seasonally adjusted non-agricultural employment is 1.1 percent lower than last quarter, but remains 1.6 percent higher than the same time period last year. In the construction industry, employment levels continue to fall. Construction employment is 7.4 percent lower than last quarter and less than 1 percent higher than the first quarter of 1988.

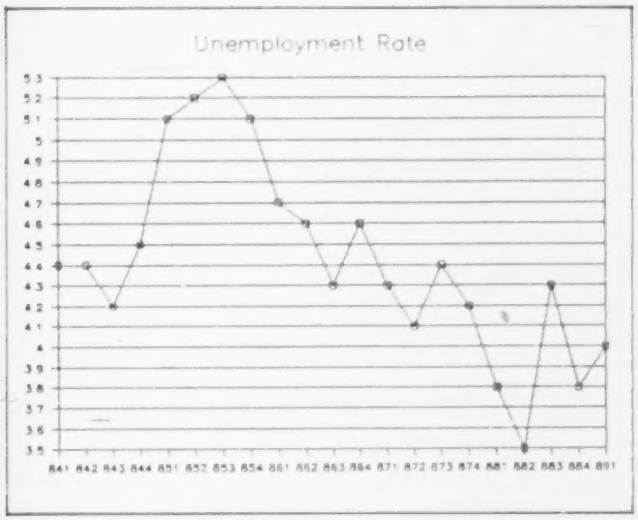
Personal income rose almost 3.5 percent in the fourth quarter of 1988, resulting in large part from the increase in real farm income (42.3%). Farm income is down 191.8 percent from the fourth quarter of 1987, while personal income is down 11.5 percent.

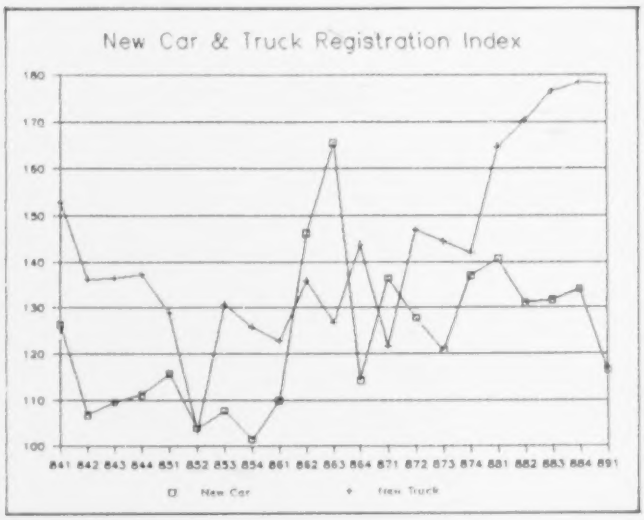
New truck registrations are holding steady, increasing less than 1 percent from last quarter. New truck sales continue to grow at a faster rate than new car sales. New car sales dropped dramatically from last quarter, being down almost 15 percent. Compared to the same quarter last year, new car sales are down approximately 24 percent and new truck sales are up 14 percent. Taxable sales remain robust, showing an 8.9 percent increase in the January-February bimonthly period compared to the same period in 1988.

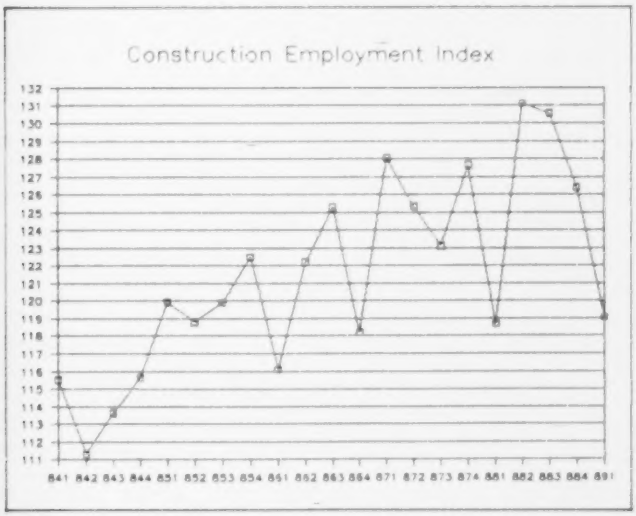
SOUTH DAKOTA BUSINESS & ECONOMIC INDICES

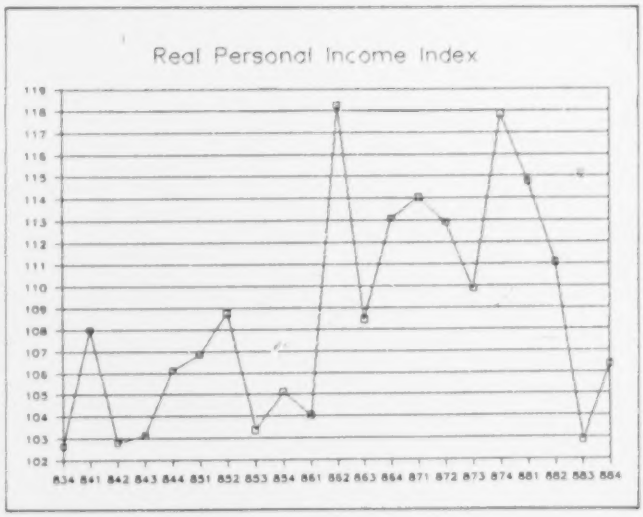
Quarterly Data 1983-1989

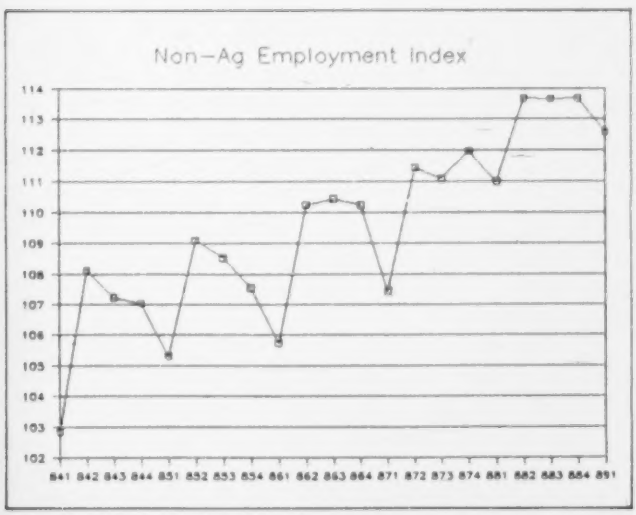
Adjusted for Seasonal Variation

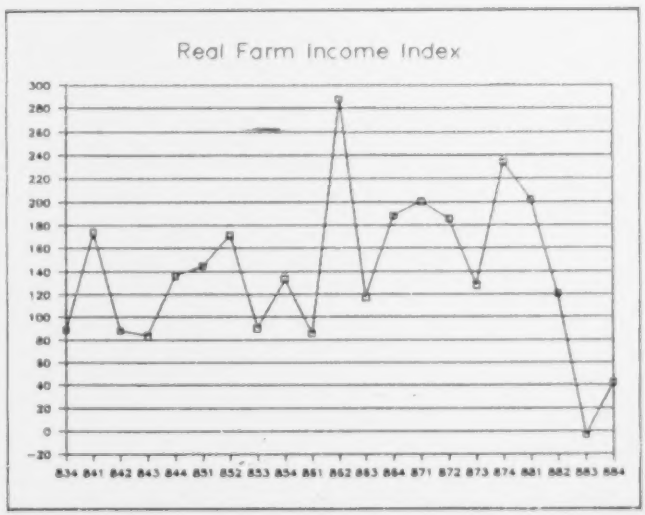












SMALL BUSINESSES *Continued from page 1.*

managers employ marketing dollars to their fullest extent.

Publicity

Publicity includes any communication through news or entertainment carried by the media that is not paid for directly by a sponsor. Businesses cannot buy publicity, but they can generate it.

There are many advantages to using publicity instead of advertising. Because companies do not purchase media time and space, publicity is much less expensive than advertising. It is not, however, free to the company. There are costs associated with a well-planned publicity campaign or with a well-placed publicity item.

Publicity also is more "believable" to consumers than advertising. The source of the message is many times perceived to be the media vehicle itself, and consumers have more faith in third party endorsements. For instance, a newspaper article praising a new product innovation is viewed as much more credible than an advertisement saying "Our product is better."

Managers should not forget that these advantages come with a trade-off. In return for lower costs and higher believability, publicity allows managers far less control over the delivery of the message than advertising does. Since you cannot purchase the media time or space, whether the information is aired or printed at all is left to someone else's discretion. If it is chosen, the information may be presented in an entirely different manner than the manager originally intended.

One key to remember when attempting to generate publicity is that the information you seek to communicate must be of some value or interest to the general public. The most commonly used form of publicity is the news release, which is usually a short article or story of a newsworthy event. New product or service introductions, especially if they are innovative, can be of particular interest. Personnel activities, such as employee promotions and transfers, may be considered newsworthy material. Special events, like grand openings and plant expansions, are also viable candidates for news releases.

For brief items of interest that may not warrant a news release, firms can use a captioned photograph to relay the information. Ground breakings and signing of important documents are examples of events that are easily communicated with a photograph and a short caption.

Press conferences are used less frequently and should be reserved only for major announcements. Arranging for members of all local media to meet at one location provides for an atmosphere to make announcements, distribute literature, and answer any questions.

One form of publicity that is often overlooked is one of the simplest means of generating publicity. Writing a letter to the editor of local newspapers and other publications can be effective in communicating many items such as notes of thanks to local citizens or businesses, responses to current events or publications, or for stating company views or policies on matters of public interest.

Along with letters to the editor, businesses can offer to provide feature stories or articles for local media. A CPA could write a series of articles discussing tax preparation tips, a florist might provide advice on planting and caring for a spring flower garden, and a building contractor could supply suggestions on simple home maintenance.

Creating or sponsoring special events can also generate publicity. Managers should limit involvement with special events to something that has a logical tie to their businesses and that is of interest to their customers. Sporting goods stores could sponsor a bicycle safety workshop during the first weeks of summer, and clothing stores could arrange a fashion show to display the latest fashions.

Although newspapers and other printed publications may appear to be the most likely target for delivery of publicity items, managers should not forget the broadcast media. Television and radio stations have news programs that are continually providing information to their audiences. Although photographs cannot be aired over radio, verbal discussion of the information about the event can be. Television coverage of an event can communicate to a wide audience very effectively. The message is delivered through verbal and visual effects. Managers of small businesses should not hesitate to contact any media when a newsworthy event occurs.

Sales Promotion

The term sales promotion is used to describe a wide variety of marketing tools whose primary goal is to provide consumers with an incentive to purchase a product or service. These tools include coupons, sampling, contests and sweepstakes, premiums, and point of purchase materials.

Most sales promotion campaigns are used as temporary incentives and are therefore intended to generate higher sales in the short run, not the long run. Although this may not sound like a reasonable goal, it is very practical for many items, like seasonal products, or in certain circumstances, like generating purchases during a particularly slow sales period.

Coupons are the most widely used form of sales promotion. Figure I indicates that coupon distribution in the United States has been increasing rapidly over the last two decades, with over 215 billion distributed in 1987. One obvious reason for the growth in this area is that coupons work. Consumers like coupons, and they provide a tangible incentive to purchase a product.

Figure I

Coupon Distribution in the United States
(Billions of Coupons)

Newspapers are the most commonly chosen media through which to distribute coupons. But newspapers are not the only method that small businesses can use to get coupons to customers. They can be distributed directly via mail delivery, or door-to-door distribution can be used in highly populated areas. Businesses can provide coupons to customers with each purchase. Tie-ins with other small businesses also provide a distribution means. A clothing store could give a coupon to each of its customers for the purchase of products at a near-by shoe store, and vice versa. Managers should remember that coupons need not be restricted to cents-off offers. Some of the "added extras" can be included in the coupon offer instead. An appliance store could offer one year's warranty at no charge with

each purchase. Restaurants could offer free dessert when purchasing a dinner.

Sampling provides consumers a chance to try a product before purchasing it. The typical example of this tool is the local grocers who supply samples of food items to shoppers. Many non-food products are well suited for sampling also. Lawn care centers can provide customers with a "test drive" of lawn mowers and garden tillers. Printers can provide a sample of letterhead and business cards with companies' logos printed on them. Day care centers can allow children and parents to visit free for one day to sample the environment.

Contests and sweepstakes give consumers the opportunity to win cash, merchandise or prizes. In contests, entrants must exhibit some skill or knowledge to win, but with sweepstakes, winning is based on chance alone. Each should be used under different circumstances. Simple contests, like an apple pie eating contest at a Fourth of July celebration, can get consumers involved and generate interest in a local bakery. Tie-ins with other businesses can also work with contests. A restaurant and car dealership could co-sponsor a "guess how many chickens will fit in a rabbit" with the winner guessing the number of chicken sandwich containers that can be put into a Volkswagen Rabbit.

Because sweepstakes require no level of skill or knowledge, they attract more entrants than do contests. Sweepstakes can attract as much as five to ten times as many entries. Marketers know this, and sweepstakes outnumber contests in the United States by approximately 5 to 1. Because the probability of winning a sweepstake is based on chance alone, proof of purchase cannot be required for entry. A straight sweepstakes is one in which the winner is drawn or selected from all entries submitted. Matching sweepstakes, where entrants must match numbers or symbols, are gaining in popularity. A common type of matching sweepstakes used recently is the "rub-off" card.

With both contests and sweepstakes, managers should clearly examine and understand regulations at the federal, state and local levels. The development and implementation of these programs may be governed by restrictions at any or all of these levels. Rules for participation should be easy for consumers to understand, but above all, they should be legal in every aspect.

Premiums are articles of merchandise provided free or at reduced prices as incentives to encourage purchase of other products. Premium offers may require multiple purchases. Premium offers should be of special interest to each businesses' customers. For instance, a video store might offer a video storage unit for $5.00 with the purchase of ten videos, or a children's furniture shop could offer a free teddy bear with each crib.

With self-liquidating premiums, customers are asked to pay a small amount for the item, typically just enough to cover the cost of the premium. Many businesses choose to offer self-liquidating premiums because customers either get an item that is unavailable elsewhere or they get the item at a lower cost than if purchased elsewhere, and the business recoups its investment in the premiums.

Point-of-purchase materials (or POPs) include promotional items used in or around a retail location to draw customers' attention to particular products or services. Perhaps the most visible POP materials are posters and signs that fill store windows or are hung over aisles. Although retailers may resist using POPs for fear of "cluttering" the store, they can be effective tools in promoting products.

Special displays can help influence shoppers to make impulse purchases or simply act as a reminder of products that he or she might have otherwise not thought of. Grocery stores could set up a grill with a display of all the items customers might need for a barbecue: charcoal, lighter fluid, matches, paper plates and utensils, potato chips, hamburger buns, condiments, marshmallows, etc. Clothing stores can use displays to show how various items can be coordinated into a unique outfit.

In addition to POPs that are designed and developed by retailers, many manufacturers have POP materials available for retailers to use in promoting their products. These items can provide an inexpensive and attractive way to display products or information about products. Retailers should inquire about POPs available from manufacturers or wholesalers who supply products. The problem in this situation might quickly become which of the many available materials should be used and which should be discarded.

Planning for Publicity and Sales Promotion

Just as planning is necessary for the success of an advertising program, it is equally imperative for publicity and sales promotion. The first step in the planning process should always be setting objectives. Managers must know what they hope to accomplish before they can decide on a game plan to do it. In setting all promotional objectives, managers must be realistic. Even an exceptionally effective publicity and sales promotion campaign cannot make up for past mistakes overnight; it cannot force customers to buy products they do not need or want. It cannot, in other words, product intemperate results.

Once an objective has been set, the next task is to determine what steps must be taken to achieve the objectives. Based on the advantages and disadvantages of each tool, managers must decide which is best suited for the job at hand. Sampling is very effective for introducing a new product. News releases can educate consumers about the company or simply act as a reminder that the business is a good "community neighbor." Coupons can encourage customers to purchase a larger quantity.

Implementing a publicity or sales promotion campaign can range from the very simple (mailing a photograph and caption to local newspapers) to the very complex (developing a contest that meets all regulations and that customers find interesting and challenging enough to enter). Small business managers should realize they do have options. In addition to the "do-it-yourself" method, managers can employ marketing professionals to help with as much or as little of the work as is needed. There are many agencies that specialize in these activities, and many advertising agencies provide assistance with publicity and sales promotion in addition to advertising.

Managers should always evaluate the effectiveness of each promotional campaign or activity. If the campaign was not successful in meeting the objectives, why not? Was the program not implemented properly, was there some unforeseen event that interfered with its effectiveness, or were the objectives simply unrealistic to begin with? If the campaign was successful, are there aspects that could be improved upon if it is repeated? The goal in evaluation is not to place blame for failure, but to assure that mistakes are not repeated in the future. In business, as with any

Continued on page 12.

PERSONAL INCOME

Continued from page 1.

3. transfer payments;
4. farm income and expenses, and;
5. regional economic profile (includes income, population, earnings, and employment data).

It should be noted that the figures in the following tables may vary from previous reports because of revisions made by the Bureau of Economic Analysis.

Definitions

Since personal income primarily represents payments to individuals for productive services rendered, this data series provides a useful indicator to measure changes in productive forces caused by fluctuating market conditions. The various components of personal income are defined as follows:

Personal Income: Income received by persons from all sources, that is, from participation in production, from government and business transfer payments, and from government interest. Personal income is the sum of private and government wage and salary disbursements, other labor income, farm and nonfarm proprietors' income, rental income of persons, personal dividend income, personal interest income, and transfer payments, less personal contributions for social insurance. Personal income is measured before the deduction of personal income taxes and other personal taxes and is reported in current dollars (no adjustment is made for price changes).

Per Capita Personal Income: Annual total personal income of residents divided by resident population as of July 1.

Disposable Personal Income: Personal income less personal tax and nontax payments. It represents the income available to persons for spending or saving.

Wage and Salary Disbursements: Monetary compensation for employees and corporate officers; tips, commissions, bonuses and any payments-in-kind which constitute income to the recipient.

Other Labor Income: Employer contributions to privately administered pension and welfare funds and other small items such as directors' fees and compensation of prison inmates.

Proprietors' Income: Monetary income and income-in-kind of sole proprietorships, partnerships and tax-exempt cooperatives.

Personal Dividend Income: Dividends received by persons from all sources.

Rental Income of Persons: Monetary income of persons derived from the rental of real property.

Personal Interest Income: Interest income received by persons from all sources.

Transfer Payments: Payments to persons who do not render current services. They include payments by government and business to individuals and to nonprofit institutions serving individuals.

Total and Per Capita Personal Income

Growth in South Dakota's personal income for the past two years was below the U.S. average of 7.3 percent. Weakness in the farm economy, particularly during the drought year of 1988, was a contributing factor. Of the states in the Plains Region, only North Dakota had less growth in the 1987-88 period. (See Table I & III.)

As shown in Table II, South Dakota's per capita personal income during the past two years was well below the national average, decreasing 0.6 percent compared to 6.2 percent for the United States. Population for this period grew slowly increasing 0.8 percent for the 1987 and 1988 period. Some care should be shown when using per capita income as an indicator of the economic well-being of the residents of an area. Dramatic changes in per capita income may be the temporary result of unusual conditions, such as a bumper crop, a major construction project or a catastrophic event such as a drought, flood, etc. Also, with population being measured at midyear, while income is measured as a flow over the year, any significant change in population during the year, particularly around midyear, can distort the per capita income figures.

Table III
Percent Changes in Per Capita and Total Personal Income
Plains States

	% Change in Total Personal Income 1979-1988	% Change in Total Personal Income 1987-1988	% Change in Per Capita Income 1979-1988	% Change in Per Capita Income 1987-1988
IOWA	57.8	3.8	62.4	3.4
KANSAS	61.5	5.5	71.3	5.0
MINNESOTA	94.0	7.0	82.0	5.5
MISSOURI	60.9	6.4	79.7	5.8
NEBRASKA	75.4	6.6	71.5	6.2
NORTH DAKOTA	54.3	-3.2	51.8	-1.9
SOUTH DAKOTA	60.5	.2	54.7	-0.6
PLAINS REGION	80.2	5.5	73.6	4.8
UNITED STATES	99.3	7.3	82.0	6.2

Source: Tables I and II

Table I
Total Personal Income By States in Plains Region
(Millions of Dollars)
1979-1988

	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988P
IOWA	26,518	27,811	31,553	31,569	31,790	34,763	36,217	38,017	40,329	41,844
KANSAS	21,795	23,565	26,736	28,457	29,471	31,799	33,819	35,697	37,501	39,561
MINNESOTA	37,257	41,108	45,803	47,734	50,027	55,824	59,278	63,140	67,533	72,265
MISSOURI	42,141	45,779	50,982	53,723	57,091	62,525	66,729	70,548	74,825	79,605
NEBRASKA	13,852	14,589	16,862	175,576	17,987	19,778	20,808	21,637	22,796	24,305
NORTH DAKOTA	5,464	5,580	6,710	7,070	7,361	7,930	8,182	8,427	8,709	8,430
SOUTH DAKOTA	5,555	5,680	6,398	6,590	6,760	7,493	7,811	8,348	8,900	8,917
PLAINS REGION	152,582	164,116	184,543	192,722	200,485	220,093	232,842	245,814	260,593	274,948
UNITED STATES	2,028,510	2,254,076	2,514,231	2,663,432	2,834,395	3,101,163	3,317,545	3,522,203	3,768,696	4,042,110

P=Preliminary Estimate

Source: Bureau of Economic Analysis, U.S. Dept. of Commerce

Table II
Per Capita Personal Income By Plains States
(Dollars)
1979-1988

	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988P
IOWA	9,091	9,537	10,815	10,868	10,964	12,015	12,604	13,384	14,284	14,764
KANSAS	9,285	9,941	11,190	11,811	12,136	13,021	13,812	14,513	15,152	15,905
MINNESOTA	9,226	10,062	11,016	11,549	12,069	13,408	14,144	14,985	15,910	16,787
MISSOURI	8,619	9,298	10,322	10,868	11,499	12,492	13,248	13,923	14,648	15,492
NEBRASKA	8,854	9,274	10,652	11,055	11,266	12,322	12,966	13,538	14,300	15,184
NORTH DAKOTA	8,378	8,538	10,149	10,520	10,804	11,548	11,952	12,420	12,971	12,720
SOUTH DAKOTA	8,062	8,217	9,249	9,489	9,672	10,612	11,030	11,798	12,545	12,475
PLAINS REGION	8,924	9,534	10,671	11,109	11,512	12,577	13,269	13,994	14,784	15,495
UNITED STATES	9,023	9,919	10,949	11,481	12,098	13,114	13,896	14,609	15,482	16,444

P=Preliminary Estimate

Source: Regional Economic Information System
Bureau of Economic Analysis

Table IV adjusts personal income for inflation to provide an assessment of the changes in real income for South Dakotans. Adjusted for changes in the Consumer Price Index (CPI), total personal income in South Dakota decreased 3.8 percent for the past two-year period.

Table IV
Total Personal Income in South Dakota
Current and 1982 Dollars
1979-1988
(1982-84=100)

	In Current Dollars	% Change From Previous Year	In 1982-84 Dollars	% Change From Previous Year
1979	5,555	14.3	7,652	2.6
1980	5,680	2.3	6,893	-9.9
1981	6,799	12.5	7,039	2.1
1982	6,590	3.0	6,829	-3.0
1983	6,760	2.6	6,767	-0.9
1984	7,483	10.7	7,202	6.1
1985	7,911	4.4	7,259	0.8
1986	8,348	5.9	7,617	4.9
1987	8,930	6.6	7,835	2.9
1988	8,917	0.2	7,580	-3.3

Source: Bureau of Economic Analysis, U.S. Dept. of Commerce

Total Disposable Personal Income

Total disposable personal income for South Dakotans showed little growth for the 1987-1988 period, rising only 0.6 percent. For the ten-year period from 1979 to 1988, disposable personal income rose 61.9 percent for South Dakota compared to 81.9 percent for the Plains Region and 100.2 percent for the United States. (See Table V.)

FIGURE A
% Distribution of Personal Income
Industrial Sources, 1985-1987

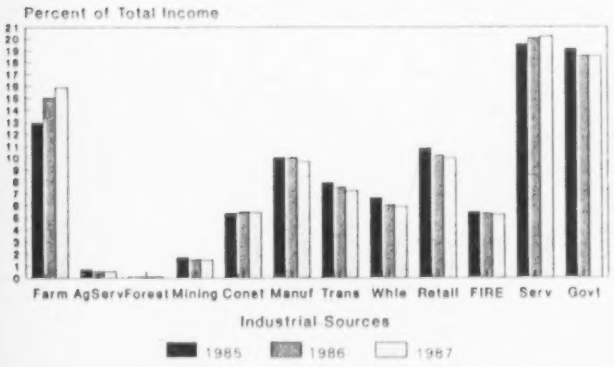


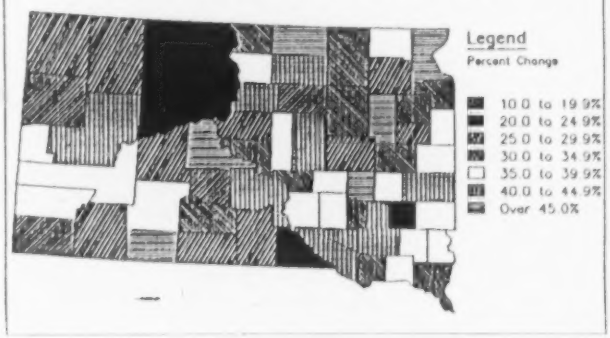
Table VI compares per capita disposable income as a percent of per capita personal income for the United States and area states. For the ten-year period South Dakota has out-paced the U.S. and area states, due mainly to the absence of a personal income tax.

Major Sources of Personal Income

A detailed breakdown of the sources of personal income is shown in Table VII on page 8. Gains of 30.7 percent in proprietors' income continue to exceed hikes in wage and salary earnings for the 1986-1987 period. Farm proprietors' income grew by 47.5 percent, while nonfarm income rose only 16.9 percent. Income in the non-farm private sector climbed 19.4 percent in the service sector. Other major sectors showing growth include construction (17.9%); manufacturing (12.3%); finance, insurance and real estate (10.1%); retail trade (6.3%) and wholesale trade up 4.5 percent for the 1986-1987 period.

A distribution of total personal income from industrial sources is compared in Table VIII on page 8 and Figure A. The three leading sources continue to be services and government, followed by the farm sector.

FIGURE B
Percent Change in Personal Income
South Dakota Counties, 1982-1987



County Personal and Per Capita Income

The final two tables present estimates of total and per capita personal income for 1985, 1986, and 1987 for South Dakota counties. Figure B compares on a county basis the percent changes in total personal income over a five-year period.

Table V
Total Disposable Personal Income
U.S. and Plains States
(Millions of Dollars)
1979-1988

	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988P
IOWA	22,443	23,864	26,511	26,587	27,021	30,093	31,307	32,908	34,593	35,316
KANSAS	18,502	19,982	22,289	23,720	24,876	27,189	29,567	30,851	31,635	33,376
MINNESOTA	31,048	34,956	37,641	39,667	41,718	47,079	49,833	53,640	56,956	61,075
MISSOURI	36,046	39,160	43,375	45,266	49,025	53,932	57,662	61,100	64,479	68,693
NEBRASKA	11,795	12,385	14,451	14,726	15,457	17,291	18,212	18,933	19,949	21,189
NORTH DAKOTA	4,795	4,804	5,633	6,140	6,419	7,103	7,261	7,517	7,702	7,446
SOUTH DAKOTA	5,014	5,061	5,725	5,825	6,052	6,721	7,102	7,604	8,069	8,116
PLAINS REGION	129,644	139,013	155,605	161,926	170,588	189,249	199,964	212,143	223,281	235,816
UNITED STATES	1,724,566	1,914,331	2,121,830	2,255,123	2,424,880	2,662,051	2,832,081	3,011,946	3,199,656	3,453,097

Source: Bureau of Economic Analysis, U.S. Dept. of Commerce

TABLE VI
Per Capita Disposable Income As A Percentage of Per Capita Personal Income
U.S. and Plains States
1979-1988

	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988P
IOWA	84.6	84.0	84.0	84.2	85.0	86.5	86.4	86.6	85.8	85.8
KANSAS	84.9	84.4	83.4	83.3	84.5	85.4	84.5	85.0	84.4	84.4
MINNESOTA	83.3	83.6	83.1	83.1	83.4	84.3	84.1	85.0	84.3	84.5
MISSOURI	85.5	85.5	85.1	84.3	85.9	86.1	86.4	86.7	86.2	86.3
NEBRASKA	85.2	84.9	85.7	83.8	85.9	87.4	87.6	87.5	87.1	87.2
NORTH DAKOTA	87.8	86.0	83.9	86.9	87.2	89.6	88.7	89.2	88.4	86.3
SOUTH DAKOTA	90.3	89.1	89.2	88.3	89.5	89.8	90.9	91.1	90.1	91.0
PLAINS REGION	85.0	84.7	84.3	84.0	85.1	86.0	85.9	86.3	85.7	85.8
UNITED STATES	85.0	84.9	84.4	84.7	85.6	85.8	85.4	85.5	84.9	85.4

Source: Bureau of Economic Analysis, U.S. Dept. of Commerce

Continued on page 8.

TABLE VII
South Dakota Personal Income by Major Sources
(Thousands of Dollars)
1985-1987

Income by Place of Residence	1985	1986	1987	% Change 1987/85
Total Personal Income	7,810,576	8,348,480	8,900,308	14.0
Nonfarm	7,125,458	7,490,843	7,923,957	11.2
Farm	685,118	857,637	976,351	42.5
Derivation of Total Personal Income				
Earnings by Place of Work	5,313,470	5,731,473	6,148,798	15.7
Less: Personal Contributions for Social Insurance	330,991	353,404	376,508	13.8
Plus: Adjustment for Residence;	11,556	12,244	11,348	-1.8
Dividends, Interest, Rent;	1,528,748	1,598,820	1,683,861	10.1
Transfer Payments	1,287,793	1,359,347	1,432,809	11.3
Earnings by Place of Work				
Wages and Salaries	3,637,030	3,792,621	4,022,199	10.6
Other Labor Income	318,949	333,491	352,032	10.4
Proprietors' Income	1,357,491	1,605,361	1,774,567	30.7
Farm	613,770	788,541	905,169	47.5
Nonfarm	743,721	816,820	869,398	16.9
Earnings by Industry				
Farm	685,118	857,637	976,351	42.5
Nonfarm	4,628,352	4,873,836	5,172,447	11.8
Private	3,613,091	3,813,733	4,032,398	11.6
Agriculture Services	37,423	29,466	32,318	-13.6
Forestry, Fisheries and Other	3,717	4,403	4,808	29.4
Mining	87,806	85,698	89,859	2.3
Construction	280,684	311,737	330,846	17.9
Manufacturing	531,406	573,696	596,837	12.3
Nondurable Goods	241,737	264,128	260,826	7.9
Durable Goods	289,669	309,568	336,011	16.0
Transportation & Pub. Utilities	419,462	430,404	442,704	5.5
Railroad Transportation	29,631	24,085	18,628	-37.1
Trucking & Warehousing	205,735	217,875	231,122	12.3
Water Transportation	63	108	148	134.9
Other Transportation	26,423	31,213	32,797	24.1
Communication	75,186	76,883	77,531	3.1
Electric, Gas & Sanitary Service	82,424	80,240	82,478	0.1
Wholesale Trade	349,094	346,144	364,703	4.5
Retail Trade	576,503	582,371	612,782	6.3
Finance, Insurance & Real Estate	288,876	304,560	318,030	10.1
Banking	158,546	165,138	170,337	7.4
Other Finance, Ins., & Real Estate	130,330	139,422	147,693	13.3
Services	1,038,120	1,145,254	1,239,511	19.4
Hotels & Other Lodging Places	31,823	32,344	34,638	8.8
Personal Services	71,601	78,154	82,419	15.1
Private Households	15,631	15,526	15,596	-0.2
Business Services	109,874	119,562	129,984	18.3
Auto Repair, Services & Garages	56,712	61,937	64,902	14.4
Miscellaneous Repair Services	24,966	28,955	30,071	20.4
Amusement & Recreation Services	18,307	20,909	22,350	22.1
Motion Pictures	2,325	2,277	2,243	-3.5
Health Services	445,828	469,876	517,243	16.0
Legal Services	56,720	63,919	70,546	24.4
Educational Services	41,323	43,395	47,008	13.8
Social Services	36,856	44,945	49,036	33.0
Museums, Botanicals, Zoological Gardens	72	77	144	100.0
Membership Organizations	57,308	60,135	61,602	7.5
Miscellaneous Services	68,774	103,244	111,729	62.5
Government and Government Enterp.	1,015,261	1,060,103	1,140,049	12.3
Federal, Civilian	250,796	256,595	273,460	9.0
Federal, Military	140,489	149,833	174,968	24.5
State and Local	623,976	653,675	691,621	10.8

Source: Bureau of Economic Analysis, U.S. Department of Commerce
Note: Summing individual items may not equal totals due to rounding.

TABLE VIII
Percentage Distribution of Total Personal Income
From Industrial Sources in South Dakota
1985-1987

	1985		1986		1987	
	Amount	% of Total	Amount	% of Total	Amount	% of Total
Total Wages & Salaries	5,313,470	100.0%	5,731,473	100.0%	6,148,798	100.0%
Labor & Proprietor's Income						
Farm	685,118	12.9%	857,637	15.0%	976,351	15.9%
Agriculture Services	37,423	0.7%	29,466	0.5%	32,318	0.5%
Forestry, Fisheries and Other	3,717	0.7%	4,403	0.8%	4,808	0.8%
Mining	87,806	1.7%	85,698	1.5%	89,859	1.5%
Construction	280,684	5.3%	311,737	5.4%	330,846	5.4%
Manufacturing	531,406	10.0%	573,696	10.0%	896,837	9.7%
Transportation & Pub. Utilities	419,462	7.9%	430,404	7.5%	442,704	7.2%
Wholesale Trade	349,094	6.6%	346,144	6.0%	364,703	5.9%
Retail Trade	576,503	10.8%	582,371	10.2%	612,782	10.0%
Finance,Insurance & Real Estate	288,876	5.4%	304,560	5.3%	318,030	5.2%
Services	1,038,120	19.5%	1,145,254	20.0%	1,239,511	20.2%
Government and Government Enpr.	1,015,261	19.1%	1,060,103	18.5%	1,140,049	18.5%

Source: Table VIII
Note: Summing individual items may not equal totals due to rounding.

TABLE IX
Total Personal Income
South Dakota Counties
1985-1987
(Millions of Dollars)

	1985	1986	1987	1987 Rank
South Dakota	7,810.6	8,348.5	8,900.3	--
Aurora	28.6	33.2	38.3	50
Beadle	219.9	231.6	248.9	6
Bennett	28.7	34.3	33.4	56
Bon Homme	78.0	81.3	90.9	23
Brookings	253.9	265.3	288.9	4
Brown	452.7	467.3	496.3	3
Brule	54.3	59.9	64.7	35
Buffalo	9.6	11.7	12.2	66
Butte	77.7	87.1	90.1	24
Campbell	19.2	27.6	26.8	59
Charles Mix	90.2	96.5	109.6	19
Clark	59.0	62.8	68.6	32
Clay	134.7	135.9	148.1	13
Codington	235.4	250.5	267.4	5
Corson	32.0	36.7	37.5	52
Custer	71.1	76.5	80.2	30
Davison	196.2	208.4	225.0	10
Day	84.8	89.3	89.7	25
Deuel	46.3	49.6	55.5	39
Dewey	34.2	41.8	41.8	45
Douglas	33.0	36.4	41.4	46
Edmunds	43.9	55.4	54.2	40
Fall River	89.7	89.0	96.6	22
Faulk	32.3	39.4	38.5	49
Grant	99.5	103.2	108.6	20
Gregory	52.7	61.2	66.2	33
Haakon	28.6	39.3	37.9	51
Hamlin	51.2	53.3	58.6	38
Hand	52.2	63.2	64.3	36
Hanson	28.4	29.7	34.9	55
Harding	16.5	22.6	21.1	63
Hughes	180.6	190.2	201.4	11
Hutchinson	99.1	100.4	113.6	18
Hyde	18.6	23.5	23.5	61
Jackson	22.9	27.5	25.3	60
Jerauld	25.0	27.6	30.9	58
Jones	18.8	20.6	21.6	62
Kingsbury	78.9	83.5	86.9	26
Lake	120.4	125.9	139.0	15
Lawrence	208.3	219.0	234.8	9
Lincoln	173.6	174.7	186.6	12
Lyman	34.3	43.3	41.1	47
Marshall	67.9	60.6	64.9	34
McCook	69.5	71.1	78.0	31
McPherson	31.1	39.5	38.9	48
Meade	215.7	236.4	246.5	7
Mellette	15.6	19.1	21.0	64
Miner	36.5	40.4	46.2	44
Minnehaha	1,588.3	1,676.8	1,797.1	1
Moody	72.3	74.4	86.1	28
Pennington	905.3	972.7	1,034.4	2
Perkins	50.5	60.6	61.4	37
Potter	43.0	53.0	53.1	41
Roberts	100.0	102.4	108.5	21
Sanborn	31.9	31.9	37.0	53
Shannon	47.2	51.5	52.9	42
Spink	119.3	124.8	127.6	16
Stanley	28.5	32.9	33.4	57
Sully	28.9	37.3	35.8	54
Todd	41.8	45.3	47.7	43
Tripp	68.7	82.9	86.2	27
Turner	103.2	102.4	115.7	17
Union	130.5	127.2	141.7	14
Walworth	72.6	83.2	83.4	29
Yankton	210.9	223.3	241.4	8
Ziebach	16.6	20.6	20.6	65

Source: Regional Economic Information System,
Bureau of Economic Analysis

TABLE X
Per Capita Personal Income
South Dakota Counties
1985-1987
(Dollars)

	1985	1986	1987	1987 Rank
South Dakota	11,028	11,799	12,550	--
Aurora	8,390	9,910	11,521	46
Beadle	11,965	12,647	13,472	15
Bennett	8,667	10,322	10,133	57
Bon Homme	11,378	11,741	13,330	18
Brookings	10,297	10,836	11,876	38
Brown	12,328	12,712	13,516	11
Brule	9,899	11,167	12,288	34
Buffalo	5,606	6,968	7,256	64
Butte	9,448	10,687	10,995	52
Campbell	8,480	12,751	12,547	32
Charles Mix	9,557	10,314	11,682	41
Clark	12,115	13,148	14,391	6
Clay	10,304	10,642	11,566	44
Codington	10,533	11,096	11,775	40
Corson	6,278	7,871	7,798	61
Custer	10,340	11,069	11,525	45
Davison	11,099	11,839	12,872	24
Day	10,702	11,297	11,579	43
Deuel	9,152	9,924	11,473	47
Dewey	6,225	7,650	7,573	62
Douglas	8,393	9,141	10,736	54
Edmunds	8,796	11,231	11,321	50
Fall River	11,445	11,323	12,527	33
Faulk	10,460	12,916	12,812	28
Grant	10,818	11,316	12,045	37
Gregory	9,046	10,719	11,670	42
Haakon	9,941	14,058	13,512	13
Hamlin	9,799	10,223	11,354	49
Hand	10,970	13,597	14,137	7
Hanson	8,602	8,915	10,629	55
Harding	9,226	12,508	12,171	36
Hughes	12,128	12,687	13,443	16
Hutchinson	11,141	11,720	13,400	17
Hyde	9,551	12,647	13,512	12
Jackson	6,768	8,135	7,262	63
Jerauld	8,793	10,014	11,395	48
Jones	12,615	13,751	14,598	3
Kingsbury	12,215	13,146	13,748	9
Lake	11,120	11,848	13,196	20
Lawrence	10,801	11,194	11,786	39
Lincoln	12,051	11,945	12,826	27
Lyman	8,995	11,577	11,277	51
Marshall	13,203	12,040	12,862	25
McCook	11,262	11,694	12,980	21
McPherson	8,363	10,876	10,952	53
Meade	9,356	10,275	10,385	56
Mellette	6,771	8,326	9,419	59
Miner	10,342	11,817	13,868	8
Minnehaha	13,073	13,696	14,526	5
Moody	10,703	11,059	12,909	23
Pennington	11,855	12,546	12,975	22
Perkins	10,757	13,110	13,628	10
Potter	11,516	14,507	14,545	4
Roberts	9,107	9,306	9,896	58
Sanborn	10,443	10,603	12,660	30
Shannon	3,770	4,421	4,504	66
Spink	13,394	14,128	14,905	2
Stanley	11,127	12,402	12,627	31
Sully	15,701	20,169	19,191	1
Todd	6,171	6,110	6,288	65
Tripp	9,498	11,604	12,279	35
Turner	11,605	11,678	13,215	19
Union	12,487	12,077	13,491	14
Walworth	10,826	12,401	12,696	29
Yankton	11,130	11,841	12,847	26
Ziebach	6,658	8,319	8,566	60

Source: Regional Economic Information System,
Bureau of Economic Analysis

SOUTH DAKOTA INCOME AND EMPLOYMENT

TOTAL PERSONAL INCOME
United States, Plains Region and States
Fourth Quarter 1987--Fourth Quarter 1988
(Millions of Dollars, Seasonally Adjusted at Annual Rates)

	1987	1988				% Change
	4th Qtr.	1st Qtr.	2nd Qtr.	3rd qtr.	4th Qtr.	4th Qtr. 1987 4th Qtr. 1988
United States	3,902,016	3,922,767	3,995,275	4,077,502	4,172,895	6.9
Plains States	272,674	271,867	274,565	273,716	279,643	2.6
Iowa	43,593	42,726	41,797	41,432	41,423	-5.0
Kansas	38,724	38,632	39,795	39,263	40,555	4.7
Minnesota	70,377	71,039	71,396	72,852	73,853	4.9
Missouri	77,117	77,241	78,950	79,986	82,241	6.6
Nebraska	24,562	24,004	24,910	23,978	24,328	-1.0
North Dakota	8,930	8,985	8,648	7,717	8,371	-6.3
South Dakota	9,371	9,240	9,068	8,486	8,872	-5.3

Note: Detail may not add to totals because of rounding.

Source: U.S. Department of Commerce, Bureau of Economic Analysis.

SOUTH DAKOTA NONAGRICULTURAL WAGE AND SALARY EMPLOYMENT
March 1988 and March 1989
(In Thousands)

				Average Weekly Hours		Average Hourly Earnings	
	Mar. 1988	Mar. 1989	% Change	Mar. 1988	Mar. 1989	Mar. 1988	Mar. 1989
Total Employment	257.8	260.3	1.0				
Total Private	197.4	199.4	1.0	32.7	33.0	$7.34	$7.49
Mining	2.5	2.5	0.0	39.9	40.1	$12.44	$12.23
Construction	7.0	6.9	-1.4	35.3	37.2	$10.02	$10.55
Manufacturing	30.5	29.6	-3.0	41.1	41.2	$7.99	$8.17
Durable Goods	16.9	15.8	-6.5				
Fabricated Metals & Mach.	10.4	9.2	-11.5				
Nondurable Goods	13.5	13.8	2.2				
Food & Kindred Products	7.5	7.7	2.7				
Paper, Printing & Publishing	3.0	2.9	-3.3				
Transportation & Pub. Utilities	13.3	13.5	1.5	38.6	37.5	$10.15	$10.71
Transportation	8.2	8.1	-1.2				
Communication	2.9	3.1	6.9				
Electric/Gas/Sanitary Services	2.3	2.3	0.0				
Wholesale & Retail Trade	66.6	67.4	1.2	30.6	31.2	$6.33	$6.27
Wholesale Trade	17.4	17.6	1.1				
Durable Goods	7.8	7.9	1.3				
Nondurable Goods	9.6	9.7	1.0				
Retail Trade	49.2	49.7	1.0				
Finance, Insurance & Real Estate	14.1	14.9	5.7	34.9	35.7	$7.25	$7.47
Services	63.4	64.6	1.9	29.0	29.4	$6.75	$7.03
Hotels, Amuse., Pers. & Business	17.2	17.2	0.0				
Medical & Health	24.4	25.4	4.1				
Educational	4.7	4.8	2.1				
Social	4.5	4.7	4.4				
Membership	8.9	8.9	0.0				
Government	60.5	60.9	0.7				
Federal	10.8	10.8	0.0				
State	16.1	16.4	1.9				
State Education	7.8	8.0	2.6				
Local	33.6	33.7	0.3				
Local Education	20.4	20.5	0.5				

Source: South Dakota Department of Labor

For further information contact Nancy Nelson

SOUTH DAKOTA AGRICULTURAL INDICATORS

SOUTH DAKOTA PROSPECTIVE PLANTINGS
MARCH 1989
(000's Acres)

Crop	Acreage Planted (Actual) 1987	1988	Intentions 1989 1/
All Corn	3,100	3,150	3,500
All Sorghum	360	460	460
Oats	1,400	1,400	1,600
Barley	870	700	700
Soybeans	1,400	1,760	1,900
Flaxseed	55	40	50
Durum Wheat	110	100	110
Other Spring Wheat 2/	1,850	1,850	2,200
All Sunflowers	300	260	300
All Hay 3/	3,950	4,100	4,300

1/Intended plantings in 1988 as indicated by reports from farmers.
2/Other than durum.
3/Harvested acreage.

Source: South Dakota Crop & Livestock Reporter

PRICES RECEIVED BY FARMERS FOR COMMODITIES SOLD--SOUTH DAKOTA
April 1988 and 1989

		Base Period Price 1910-1914 Average	April 1988	April 1989	April 1989 Price as % of Base	April 1989 Price Above or Below April 1988
Wheat	Bu.	0.850	2.77	3.94	464	42.2
Corn	Bu.	0.510	1.78	2.41	473	35.4
Oats	Bu.	0.350	1.82	2.00	571	9.9
Barley	Bu.	0.590	1.59	3.05	517	91.8
Flaxseed	Bu.	1.680	4.17	2/		
Milk, Whol.	Cwt.	1.820	1/	1/		
Eggs	Doz.	0.196	1/	1/		
Cattle	Cwt.	5.240	69.60	70.10	1338	0.7
Calves	Cwt.	6.080	90.00	89.00	1464	-1.1
Hogs	Cwt.	7.070	41.70	35.80	506	-14.1
Sheep	Cwt.	4.240	22.90	27.90	658	21.8
Lambs	Cwt.	5.660	73.90	76.40	1350	3.4
Wool	Lb.	0.178	1.33	1.33	747	0.0

1/ Parity prices calculated quarterly (January, April, July, October).
2/ Not published.

Source: South Dakota Crop & Livestock Reporter.

SOUTH DAKOTA LOCAL CONDITIONS INDICATORS

SOUTH DAKOTA LOCAL CONDITIONS INDICATORS
(% Change Like Period Previous Yr.)

City	Total	Taxable Sales/1 Retail	Services	Telephone Services/2	Housing Starts/3	Postal Indicator/4	Employment*/2
Aberdeen	6.5	2.1	-.3	2.0		23.4	-6.6
Belle Fourche	1.3	1.2	6.0	3.0			-4.8
Brookings	14.3	6.4	5.1			46.1	9.2
Canton	30.9	30.8	2.8	.8			7.4
Chamberlain	12.5	7.2	11.3	2.3			0.0
Deadwood	10.6	1.8	7.9	1.2			5.2
De Smet	1.5	3.3	11.5	.4			-0.8
Elk Point	1.5	6.5	-7.4	2.2			2.2
Hot Springs	1.1	2.1	-11.5				-3.0
Huron	-2.5	6.7	-29.8	1.5		16.0	-0.4
Lead	4.8	21.0	34.1	14.7			5.2
Madison	3.8	4.7	-0.3	1.5			0.8
Milbank	14.3	14.4	5.2	1.2			-0.7
Mitchell	3.2	4.1	8.3	2.7		20.2	4.0
Mobridge	3.1	1.3	-2.8	1.6			1.8
Pierre	6.0	5.1	9.6	1.7	-73.7	23.9	-0.7
Rapid City	7.7	7.7	1.5	2.0	-75.2	31.5	-1.3
Sioux Falls	17.1	22.1	4.9	2.8	-49.6	25.1	-0.8
Spearfish	4.9	4.7	4.6		16.5		5.2
Sturgis	16.6	16.1	5.1	1.3			0.8
Vermillion	1.0	.7	13.0	1.4			0.1
Watertown	11.2	10.9	.3	4.2	814.3	12.3	3.1
Winner	5.3	8.6	.3	1.7			1.3
Yankton	12.5	13.0	-.8	4.0	-29.0	13.9	2.1

*Based on County Data

1/ Percentage change for Jan.-Feb. 1988 and 1989.

2/ Percentage change for March 1988 and 1989. Telephone data are for the number of access lines in service.

3/ Percentage change for Jan.-March 1988-1989. Data reported for housing represent the value of housing starts.

4/ Percentage change for the 1st quarter of 1988 and 1989. Included in postal indicators are: postage sales, postage meters for customers, meter imprint postage (3rd class regular), and second class postage.

SOUTH DAKOTA
Business Review

BUSINESS RESEARCH BUREAU
SCHOOL OF BUSINESS - USD
414 E. CLARK STREET
VERMILLION, SOUTH DAKOTA 57069

ADDRESS CORRECTION REQUESTED
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Permit No. 14

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Attn: Cheryl Waldman
Dept. SRI
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SMALL BUSINESSES

Continued from page 5.

endeavor, people learn from their successes and from their mistakes. Neither should be ignored.

Conclusions

Although advertising is pervasive in our society, it is not always the best form of promotion for businesses. In fact, there is no "best" promotional method. The tool used must fit the situation. The discussion here is not meant to suggest that small businesses should ignore advertising and concentrate solely on publicity and sales promotion. Rather, it is intended to describe publicity and sales promotion as practical, effective forms of promotion that should be used when appropriate.

CONSUMER PRICE INDEX*
United States
Jan.-Mar. 1989
(1982-1984=100)

	Jan.	Feb.	March	Unadjusted % Change Jan.-Mar.
All Items	121.1	121.6	122.3	1.0
Food & beverages	122.0	122.7	123.3	1.1
Food	122.2	122.9	123.5	1.1
Alcoholic beverages	120.3	121.1	121.8	1.2
Housing	120.7	121.1	121.5	0.7
Shelter	129.8	130.3	131.2	1.1
Renters' costs	135.2	136.3	138.6	2.5
Homeowners' cost	134.4	134.7	135.0	0.4
Fuel & other utilities	106.0	105.9	105.9	-0.1
Fuels	98.7	98.6	98.5	-0.2
Fuel oil, coal & btld. gas	80.5	81.4	81.5	1.2
Gas (piped) & electricity	105.1	104.9	104.8	-0.3
Other util. & Pub. Services	125.9	126.0	125.9	0.0
Household furn. & operation	110.9	110.9	110.5	-0.4
Apparel & upkeep	115.3	115.3	119.3	3.5
Transportation	111.1	111.6	111.9	0.7
Private transportation	109.8	110.3	110.7	0.8
Public transportation	127.5	128.1	128.2	0.5
Medical care	143.8	145.2	146.1	1.6
Entertainment	123.8	124.3	124.7	0.7
Other goods and services	143.4	144.1	144.4	0.7

*Consumer Price Index for all Urban Consumers

Source: Bureau of Labor Statistics, U.S. Dept. of Labor

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SOUTH DAKOTA
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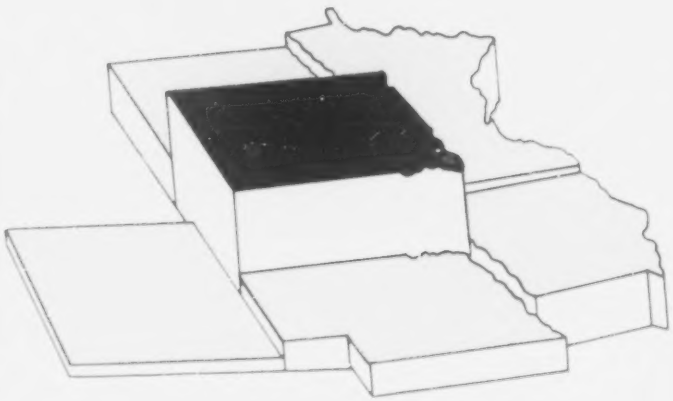

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		SOUTH DAKOTA			UNITED STATES		
General Indicators	Latest Quarter	Latest Quarter	Year Ago	Percent Change	Latest Quarter	Year Ago	Percent Change
Personal Income ($ Mil.)	1989-1	9,816	9,240	6.2	4,297,169	3,922,767	9.5
Farm Prop. Income ($ Mil.)	1989-1	960	1,004	-4.4	54,902	44,109	24.5
Non-ag Employment (Thous.)	1989-2	269	267	0.7	108,299	105,184	3.0
Unemployment Rate (%)	1989-2	3.8	3.7	2.7	5.2	5.4	-3.7
Total Employment (Thous.)	1989-2	352	349	0.9	117,926	115,350	2.2

Note: All U.S. data seasonally adjusted except for the unemployment rate and total employment. For South Dakota only personal income and farm proprietors' income are seasonally adjusted.

THE ECONOMICS OF THE MINIMUM WAGE

Dennis Johnson

The Fair Labor Standards Act of 1938 established a minimum wage of twenty-five cents per hour and covered approximately forty-four percent of the work force. Since that time the act has been amended eight times, each amendment increasing the nominal minimum wage and also usually increasing coverage. By the late 1980's the minimum wage was at $3.35 per hour and covered over 90% of the nation's nonsupervisory workers.[1]

As indicated in Figure I, in real terms the minimum wage is currently at the lowest level in over 30 years, triggering demands for another increase, as it is commonly believed that such a policy will improve the lot of the poor. This spring President Bush vetoed legislation which would have increased the legal minimum to $4.55 per hour by October of 1991. The issue is not dead, however, and some Washington watchers expect a new bill to be introduced by early next year.

Most economists have very little inclination for minimum wage increases, as their discipline rather strongly suggests that direct interference with wages and/or prices usually hinders economic efficiency. This could only be justified by gains elsewhere, such as improvements in the distribution of income. But adjusting the distribution of income so as to help the poor is difficult, and trying to do so through the minimum wage has several disadvantages. For example, raising the minimum wage may decrease employment

About the author:
Dennis Johnson, Ph.D., is Professor of Economics, School of Business, The University of South Dakota, Vermillion, SD.

[1]Originally limited to workers directly engaged in interstate commerce, minimum wage coverage has expanded to include all but executive, administrative, and professional people, the self employed, and employees in firms with less than $362,500 in sales (Wall St. Journal, April 13, 1989).

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TREND OF BUSINESS

The United States Economy

Real Gross National Product (GNP) posted an increase of 2.7 percent in the second quarter of 1989, down from the 3.7 percent last quarter. In the July issue of the *Survey of Current Business*, the U.S. Department of Commerce attributes approximately 2 percent of the first quarter's increase in GNP to a rebound from the 1988 drought. Discounting this 2 percent effect, the GNP increased at roughly the same rate in both quarters. The average annual rate of real GNP growth for the year is 2.7 percent.

Disposable personal income (DPI) was up 6 percent in the second quarter of 1989, down from the 12 percent recorded in the first quarter. The personal savings' rate decreased 0.2 percent, the first decrease in the last year. This was largely a result in the slowed growth of disposable personal income.

Domestic car sales were up 0.3 million units from the first quarter. Sales of domestic trucks increased slightly.

The nation's unemployment rate rose somewhat this quarter to 5.3% of the civilian labor force, compared to 5.2% for the first quarter. Annualized, the average unemployment rate for 1989 is 5.2 percent. Total civilian employment increased slightly.

The Index of Leading Indicators was relatively unchanged from May to June and rose 0.2% in July. Factory orders reached their lowest level since November 1988. Weak manufacturing area activity is causing some concern among economists.

Average per capita personal income in the U.S. is $16,489, a 6.6% increase over 1987. Total personal income increased 9.5 percent from the 1st quarter of 1988 to the 1st quarter of 1989. Farm proprietors' income nationally increased 130.7% from the previous quarter. Inflation, as measured by the Consumer Price Index, rose 5.3% on the second quarter of 1989, compared to this period a year ago. Most economists are predicting continued economic expansion throughout 1989, but feel that the rate of growth will slow considerably.

South Dakota's Economy

On a seasonally adjusted basis, unemployment in South Dakota continued to rise in the first half of 1989, increasing from 4.0 percent in the first quarter to 4.2 percent in the second quarter. The current unemployment rate is slightly higher than the 4.1 percent posted in the same period last year. Seasonally adjusted non-agricultural employment is nearly 4 percent higher than last quarter, but is less than 1 percent higher than the same quarter a year ago. Employment levels in construction improved somewhat this quarter, rising almost 1 percent. Current construction employment has only dropped approximately 1 percent, compared to the same period in 1988.

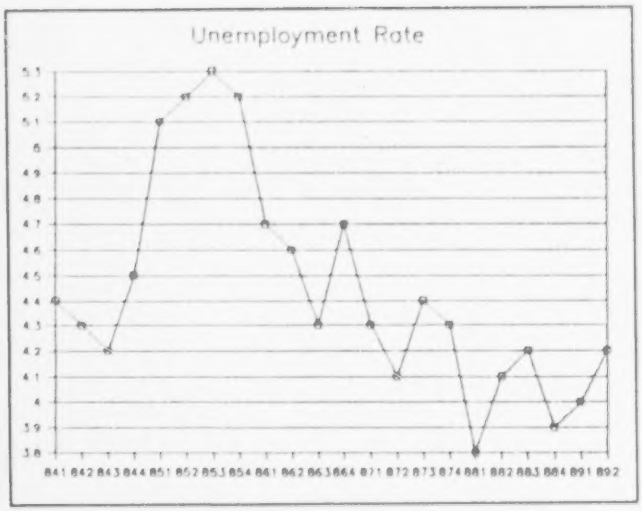
Personal income continued its upward trend, increasing slightly more than 8 percent in the first quarter of 1989. The sizable increase (335 percent) in real farm proprietor's income accounted for a large portion of this increase. Following the drought-induced losses of the third and fourth quarters of 1988, the first quarter increase reflects a return to near normal levels of early 1988.

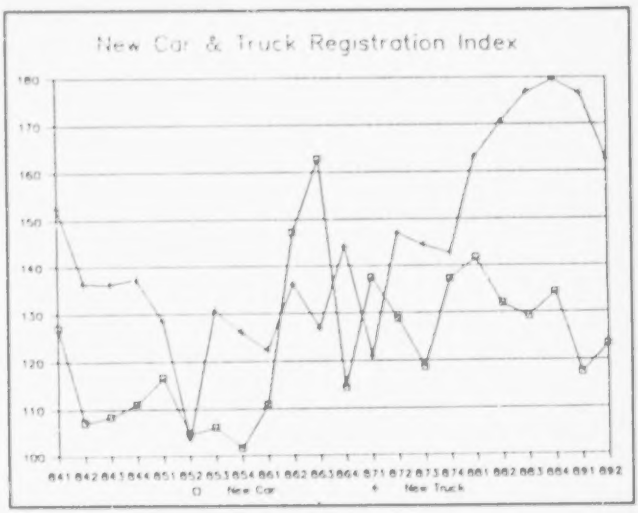
New car sales on a seasonally adjusted basis rose 5.0 percent over last quarter, although they are 6.7 percent less than the same quarter last year. New truck registrations hit their lowest point since the fourth quarter of 1987. Seasonally adjusted, new truck sales dropped 8.0 percent from last quarter and are 4.8 percent below the level of the second quarter in 1988.

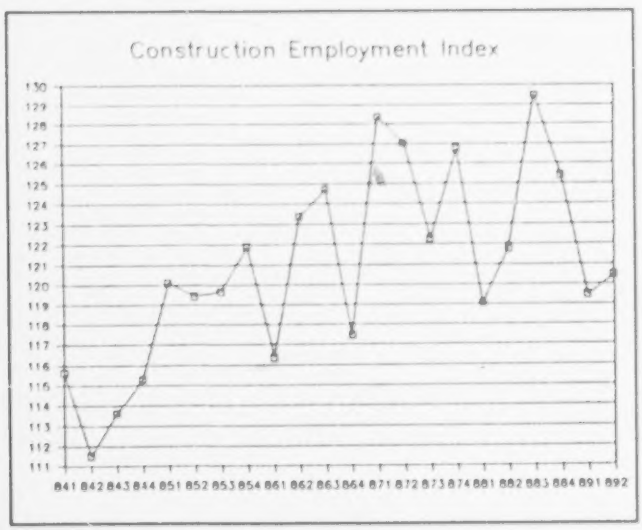
SOUTH DAKOTA BUSINESS & ECONMIC INDICES

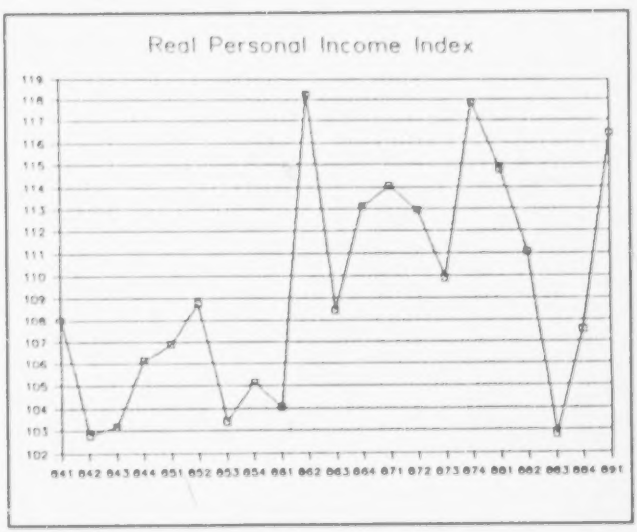
Quarterly Data 1984-89

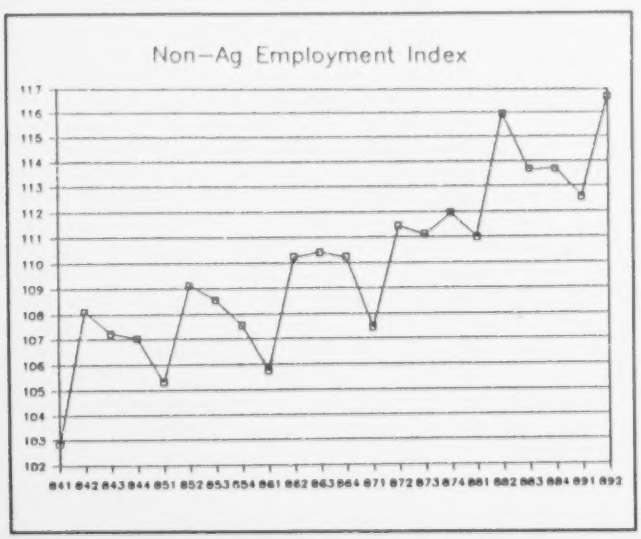
Adjusted for Seasonal Variation

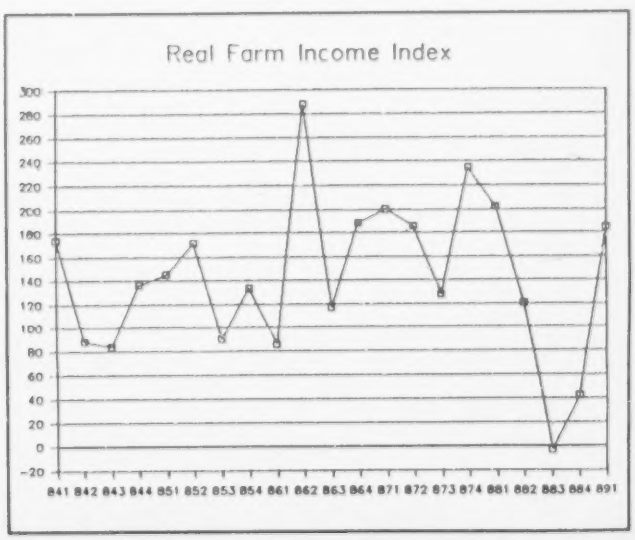








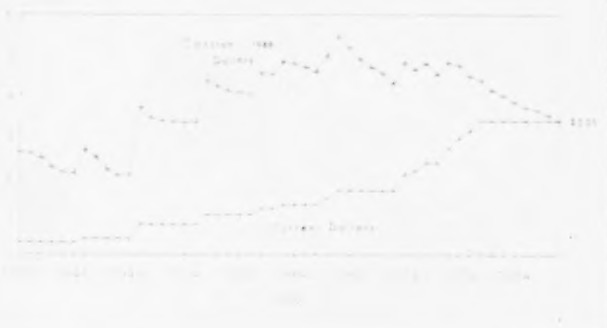




Continued from page 1.

of unskilled workers,[2] reducing the national income as well as making it harder for the unskilled to move into the economic mainstream. Common sense suggests, too, that raising the incomes of the poor is more complex than passing a law requiring that wages be increased. If that were true it would be a simple matter to make everyone extremely wealthy by requiring that everyone be paid (say) $100 per hour.

Figure I
Minimun Wage in Current and Constant (1988) Dollars, 1939 - 1988



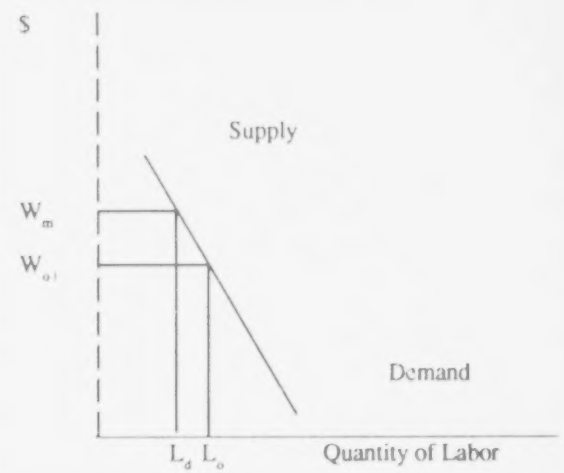
The economic analysis of the minimum wage question hasn't changed appreciably throughout the entire half century of debate. Economists don't debate the minimum wage much among themselves, and to them the continuing debate by others reflects not the limitation of economic science, severe as that is, but rather indicates that what is known is comprehended by so few, and is so poorly used.[3] While I suppose one's ambition should have limits, this article is presented in the hope of improving public comprehension and use of elementary economic principles in this question of public policy. Part I describes some elementary economic theory as applied to the minimum wage, and Part II reviews some empirical evidence on the employment question as well as on the impact of the minimum wage on the poor. The article closes with a brief summary. Since this is an essay which purports to describe rather than develop principles, proofs are omitted.

Part I. The Minimum Wage and Competitive Labor Markets[4]

Economic analysis suggests that wage rates, like other prices, are determined by the interaction of buyers and sellers. If buyers wish to purchase more than sellers want to sell, buyers will offer a higher price in the scramble to acquire what they want. Price increases stop only when the price is high enough so that buyers wish to purchase only that amount which is available. In like manner, if there is a surfeit of labor, the wage rate will fall until the amount that firms wish to buy is equal to that which is offered. Such elementary common sense notions are what lie behind supply and demand analysis, but the ability to use these concepts properly usually requires a great deal of practice, as the analysis is more subtle than the simple ideas which underlie the concepts would suggest. To help avoid some of the worst errors it is probably worthwhile to define supply and demand curves somewhat more precisely, and to work through some of the direct implications of a legal minimum wage.

Formal analysis predicts, and empirical evidence confirms, that employers wish to hire more labor as the wage rate decreases. It is this relationship between the wage rate and quantity of labor that is called the demand for labor. In Figure II, it is seen that if the wage rate is W_m the amount of labor firms wish to hire is L_d, while if the wage is lowered to W_o, firms will wish to hire L_o. Connecting these points with a line depicts a portion of the demand curve graphically. Since this curve slopes down as we move to the right on the graph, economists say the demand curve "slopes down and to the right."

Figure II Supply and Demand for Labor



The supply curve of (unskilled) labor shows how much providers wish to sell at various wage rates. If the price of unskilled labor rises, the amount of it offered for sale increases too, as is the case with almost all commodities. This is to say that the supply curve "slopes up and to the right." Analytical ease is sometimes facilitated by fixing the total supply of labor at a given amount, and in such cases the supply curve is drawn as a vertical line, as in Figure II.

Economists say that a market is "cleared" or is in "equilibrium" when the amount buyers wish to buy is the same as the amount sellers wish to sell. The demand curve shows how much buyers wish to buy, and the supply curve shows how much sellers wish to sell, so the market clears where supply and demand curves intersect each other. This occurs, in Figure II, at wage rate W_o, and hence W_o is called the market clearing wage. Clearly, imposing a legal minimum at W_m results in people wishing to buy a smaller quantity than is offered for sale. But use of the mechanism by which the market will clear, i.e., a lowered wage rate, is now illegal. Hence employment is reduced and disequilibrium persists.

If the coverage of the minimum wage is incomplete, then the result of increasing the minimum wage is not necessarily increased unemployment. For this analysis, we divide the economy into two sectors, only one of which is covered by the minimum wage. If, in Figure III, the minimum legal wage is W_m, employment in the covered sector will be reduced by $L_{mo} - L_{m1}$. Displaced workers either drop out of the work force entirely, or they find work in the uncovered sector. The increased supply of workers in the uncovered sector reduces wages in that sector to W_u. The increase in employment in the uncovered sector will be less than the reduction elsewhere, as some of the displaced workers leave the work force, as indicated in panel c of Figure III by the shift in the

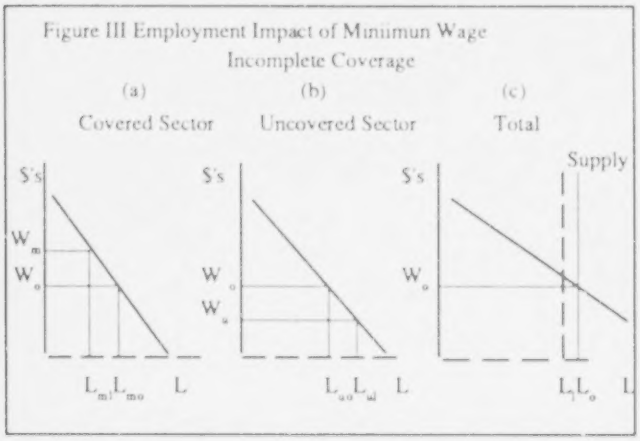
[2]Ninety percent of economists agree, with some provisions that minimum wages increase unemployment among young and unskilled workers. See J.R. Kearl, Clayne L. Pope, Gordon C. Whiting, and Larry T. Wimmer, "A Confusion of Economists," *American Economic Review*, 69 (May 1979): 28-37.

[3]A despairing economist once lamented that he sometimes thought that only economists, and not all of them, understood market processes.

[4]Standard textbook expositions include discussions of noncompetitive labor markets, but available empirical evidence better supports the competitive model. Hence the discussion of noncompetitive markets is omitted.

supply of labor from L_o to L_1. There is no perceived unemployment, but it is clear that at least part of the income gains due to the minimum wage is at the expense of other unskilled workers, some of whom are no longer employed as a result of leaving the work force, and some who receive lower wages than they would if there were no minimum.

Figure III Employment Impact of Minimum Wage
Incomplete Coverage



The above principles are derived through partial equilibrium analysis, by which we look only at markets affected directly. Clearly, however, when prices and quantities in one market are affected, other markets will be affected as well. General equilibrium analysis takes into account the effect of the minimum wage in all markets. While for our purposes almost all features of interest can be deduced from partial equilibrium analysis, general equilibrium considerations are important for determining the impact of the minimum wage on the distribution of real income. Of especial interest is the impact of the minimum wage on prices of final goods and services purchased by the poor. This analysis is necessarily quite complex, so suffice it to say that general equilibrium analysis suggests that prices of final goods and services will increase, but by an amount less than proportional to the increase in the minimum wage.

II. Empirical Evidence

This brief description of economic principles as applied to the minimum wage suggests that empirical evidence be gathered with respect to 1) the extent of reduced employment occasioned by increases in the minimum wage, and 2) the impact of the minimum wage on the personal distribution of income. Before turning to these matters, however, it is worthwhile to take a brief look at a commonly made mistake.

The prediction of reduced employment of unskilled workers if minimum wages are increased is not to be refuted by simple minded observation of what happens to employment following a minimum wage increase, as the impact of increasing the minimum wage must be isolated from other things which may influence employment levels, such as the business cycle. It is astounding how often this simple point is missed. For example, some combatants in the minimum wage struggle have argued that "only once in the eight times Congress has increased the minimum wage over the past fifty years has employment dropped, and that drop was the result of the 1974-75 recession and not the wage freeze."[5] Again, "Eleven of our states have higher minimum wage rates than our current (national) one, and in those states, unemployment is lower than it is nationally."[6] Such crude observations tell us absolutely nothing about the employment effects of the minimum wage, as straight thinking tells us that if we are to observe the impact of the minimum wage on employment *all other* influences on employment must be held constant. What is important is to compare what employment is with what it would have been had there been no increase in the minimum wage.

A. Empirical Studies: The Employment Question

Since it is to be expected that any employment effects of the minimum wage will be felt by the unskilled, most empirical studies have concentrated on teenagers, who hold about one-third of all minimum wage jobs.[7] Comparing the prediction of economic theory with real world facts is usually best accomplished through a statistical technique known as multiple regression. This technique organizes data in such a way that relationships between, for example, wage rates and employment, can be examined rigorously. There have been over two dozen regressions based on time series data which have appeared in the economics literature[8]. A typical study will attempt to determine whether there is a correlation between the percentage of teenagers employed, and 1) a minimum wage variable, 2) an indicator of aggregate economic conditions (like the unemployment rate for males aged 20 and above), 3) perhaps a time trend, and 4) other variables such as the proportion of youth in the armed forces. The minimum wage variable is usually defined so as to include the extent of coverage, e.g., the ratio of the minimum wage to the average manufacturing wage weighted by the proportion of workers covered.

These studies are virtually unanimous in supporting the proposition that increasing the minimum wage will decrease teenage employment. There is some variance with respect to the magnitude of the employment reduction, but most studies indicate that a 10 percent increase in the minimum wage results in a one to three percent reduction in teenage employment.[9] Increasing the minimum wage from $3.35 to the recently proposed $4.55, a thirty-six percent increase, would thus decrease teenage employment by between 3.6 and 10.8 percent. With approximately 5.7 million teenagers working, that translates into a reduction in employment of between 200,000 and 615,000 teenaged workers. Because of the phenomenon of dropping out of the labor force, *unemployment* increases will be somewhat smaller.

A cautionary note is perhaps wise. It is common knowledge that teenage unemployment rates are very high, in the 20 percent range for whites and about double that for blacks. While the minimum wage rate undoubtedly contributes to this, it also is clear that one should look elsewhere to find the major cause of this high level of teenage unemployment. This is so because while changing the minimum wage does affect employment, the effect is not so dramatic that this by itself will explain the high unemployment rate. This is consistent with the casual observation that the reduction in the *real* minimum wage since 1981 does not appear to have been very successful in reducing teenage unemployment.

B. Empirical Studies: The Minimum Wage and the Poor

The relation between the minimum wage and the distribution of income is much less tight than is generally supposed.[10] There are two major reasons for this. First, most minimum wage workers are not in low income families. In 1985, about 70 percent of minimum wage workers were in families with incomes above

[5]WSJ, March 24, 1989.

[6]Ibid.

[7]Ralph E. Smith and Bruce Vavrichek, "The Minimum Wage: Its Relation to Incomes and Poverty." *Monthly Labor Review*, June, 1987. p. 29.

[8]The best survey is still Charles Brown, Curtis Gilroy and Andrew Kohen, "The Effect of Minimum Wages on Employment and Unemployment," *Journal of Economic Literature*, June, 1982, XX #2. P. 487 - 528. A less detailed but more recent corroborative work is Charles Brown, "Minimum Wage Laws: Are They Overrated? *Journal of Economic Perspectiaves*, Vol. 2, #2, Summer 1988. pp. 133 - 145.

[9]The ratio of the percentage change in employment to the percentage change in the wage rate is known as the elasticity of demand for labor. In this case this elasticity is between -.1 and -.3.

[10]The first good study to get a handle on this was Edward M. Gramlich, "Impact of Minimum Wages on Other Wages, Employment, and Family Incomes," *Brookings Papers on Economic Activity*, 2, 1976, pp. 409 - 451.

Continued on page 6.

Continued from page 5.

150% of the poverty line.[11] Table I shows earlier data which indicates that in the mid 1970's individuals earning the minimum wage or less were spread quite evenly across the income deciles, which again suggests that by far the greater portion of minimum wage workers are in nonpoor families, and often are second or even third workers in a family. Second, many of the poor are in families which have only a marginal attachment to the work force. For example, there were *no workers* in forty-one percent of the 7.6 million families in poverty in 1983. [12] Consistent with these observations is the fact that a small proportion of total household income in any decile comes from low wage workers, as shown in the final column of Table I.

Table I

Proportion of Workers in 1976 with Wages Less than the Minimum Wage (of $2.30) by Income Decile, and the Importance of Low Wage Work.

Income Decile	Percent of Workers with wage≤ $2.30	Earnings of Workers with Wage ≤ $2.80 as a Percent of ATAT* Income
1	11.5	13.5
2	9.5	10.0
3	9.7	7.1
4	9.1	5.6
5	9.5	4.7
6	9.6	3.9
7	9.0	3.1
8	10.2	2.6
9	10.6	2.2
10	11.1	1.2
Total	100.0	3.4

Source: Johnson and Browning (see note 13 for complete citations), Table I, p. 206.
*After Taxes and Transfers

The impact of increasing the minimum wage on the real incomes of the poor was rigorously examined by Johnson and Browning.[13] The gains and losses which would have occurred in 1976 had the minimum wage been increased to $2.80 from $2.30, a 22 percent increase, were simulated. A brief description of the benefits and costs is given in the paragraphs below.

Direct benefits are relatively easy to identify, as they accrue to individuals who remain employed at the higher wage. The cost of increasing the minimum wage is more difficult to identify and place in the income distribution. Of course the immediate cost is borne by employers of unskilled labor, who experience an increase in production cost and a reduction in profits. In the longer term less unskilled labor will be hired, as it will tend to be replaced by skilled labor and capital, with consequent changes in the price of these inputs. However, such replacements cannot reduce costs to their former level, and so prices of final products will be increased.

It is important to realize that raising the minimum wage creates no *new* income.[14] In fact, if employment is reduced there is a reduction in national income, as the country has less output. Hence, gains made by any individual or group in the country must come at the expense of someone else. While difficult to determine precisely, general equilibrium considerations suggest that the burdens of the minimum wage are borne proportionately to income. This is precisely the case insofar as the increase in the minimum wage is reflected in higher prices for final goods. Under this assumption the net gains by income class under various demand elasticities are given in Table II.

Table II

Net Gains by Income Class, After Marginal Tax (Millions of Dollars)

Income Decile	Net Gains of Income Class when Elasticity is: 0.0	0.2	0.5	Percent of Households that gain*
1	$206.2	$156.9	$82.8	15.5
2	200.6	145.9	63.7	14.6
3	173.7	117.2	32.7	13.9
4	138.0	79.4	-8.4	13.0
5	103.8	42.6	-49.8	14.2
6	43.6	-15.2	-103.4	13.9
7	-29.2	-86.6	-172.7	12.4
8	-82.6	-141.2	-229.0	13.2
9	-189.6	-241.1	-318.3	12.4
10	-516.7	-556.2	-615.5	11.2
Total	+47.8	-498.3	-1317.8	13.4
Change in Tax Revenue	-47.8	-466.1	-1175.0	
Reduction in Nat'l Income	0.0	964.4	2492.8	

Source: Johnson and Browning, op. cit. Table 4, p. 210.
*For the zero elasticity case only.

Clearly, there is some net transfer of income to those in the lower deciles of the income distribution. However, the gain is quite small, as in no case is the net gain more than 2 percent of initial disposable income in the decile.

Johnson and Browning also point out that the effect *within* deciles is important. The last column in Table II shows the proportion of households that gain from the policy. For example, in the lowest decile, only 15.5 percent gain, while the remaining 84.5 percent lose. This is because most of the poor are not in the labor force, and as a result share in the cost of the minimum wage policy, but do not participate in the gains.

Finally, it should be observed that if there are disemployment effects we can get some measure of the inefficiency of the minimum wage policy. If the elasticity of demand for labor is zero, there are no measured costs of inefficiency, but under the most realistic measure of the elasticity, i.e., about .2, the inefficiencies are substantial. Ignoring the reduction in aggregate tax revenues, for every dollar in cost borne by people in the upper half of the income distribution, the poor benefit only to the extent of 52 cents. [15] And even this 52 cents overstates the benefits insofar as the reduction in tax revenues reduces the flow of government services to the poor.

CONCLUSION

This article has described the economic analysis of the minimum wage, pointing out that a legal minimum above the market clearing wage will reduce employment, especially of teenagers and other unskilled workers, and will also reduce the

[11] See Ralph E. Smith and Bruce Vavrichek, "The Minimum Wage: Its Relation to Incomes and Poverty," *Monthly Labor Review*, June, 1987. p. 27.

[12] "Characteristics of the Population Below the Poverty Level: 1983," *Current Population Reports*, Series P-60, No. 147, Table 25, p. 99.

[13] William R. Johnson and Edgar K. Browning, "The Distributional and Efficiency Effects of Increasing the Minimum Wage: A Simulation," *American Economic Review*, March, 1983. pp. 204 - 211.

[14] A few economists have argued that the minimum wage can produce a "shock" effect, whereby employers react to the minimum wage in such a way to increase productivity. There are good reasons why this probably doesn't happen, See Donald Mcloseky *The Applied Theory of Price*, 2nd ed., 1985 (Macmillan, New York), p. 455.

[15] The sum of the net benefits in the lower half of the income distribution is $542 million, while the sum of the costs in the upper half is $1040.3 million. Dividing one by the other yields the 52 cents.

national income. Increasing the minimum wage also results in very limited improvement in the incomes of the poor, as most minimum wage workers are in nonpoor families, and many poor families have no workers at all. This implies, of course, that raising the minimum wage is an inefficient way to help the poor. Such inefficiency is illustrated by estimates which indicate only 52 cents in benefit for every dollar of cost.

It should go without saying, of course, that the above analysis and information is not conclusive with respect to the desirability of increasing the minimum wage. Some individuals may believe that a 52 cent benefit per dollar of cost is enough to justify the policy. Each individual must decide this for himself, as economic analysis can only indicate what the benefits and costs of a policy are, not whether the policy is, in the final analysis, wise.

THE QUALITY CHALLENGE

Gene B. Iverson

INTRODUCTION

The concept of quality takes on different meanings depending on one's viewpoint. In many cases it is difficult to define what one means by quality products or services, but everyone recognizes it when they see it. A quiet revolution is underway in the world and the winners will have the opportunity to stay in business.

Deming relates the situation in Japan in 1950 when Japan had a negative net worth, devoid of natural resources. Moreover they had a well-earned reputation for poor quality products, but cheap. Deming (p. 5) states that battle could only be won through quality products and service. The consumer needed to become the most important part of the quality program. This would be a difficult challenge for top management, but top management involvement was necessary. Education and training in statistical process control and understanding variation was necessary for every employee. Emphasizing quality products and service requires back-to-the-basics management by reinstating the individual (worker performing the process) as the key element and then focusing on improving the process managed by the individual. The basic approach to quality follows the improvement theme. Quality should not be looked upon as a process of finding the defects, determining acceptable quality level or where nothing happens as long as things are going fine and then reacting to quality problems as they occur. Rather, there should be a constant and continuous search for ways to improve the production process to prevent quality problems before they occur. This article discusses a basic model, factors, and tools necessary to implement quality control procedures.

MODEL AND FACTORS OF QUALITY

The basic ingredient of quality is knowing and understanding the expectation of the customer regarding the firm's products and services. A basic model for quality implementation would include the following (Hall, p. 55):

1. Define quality as seen by the customers of the product or service.
2. Define quality needs in measurable ways.
3. Measure quality.
4. Set targets for improvements with deadlines.
5. Develop systematic methods of improvement.

David Garvin identifies factors of customers' perception of quality and gives examples as follows:

1. Performance (clear picture on a TV).
2. Features (power windows).
3. Reliability (failure rates or car always starts).
4. Conformance (car door fit).
5. Durability (lasts 10 years).
6. Serviceability (easy to access filters).
7. Aesthetics (appealing to the eye).
8. Perceived quality (Rolls Royce or Stradivarius violin).

Statistical procedures are needed to tell individuals how the processes are going and ways to improve the process. These procedures are based on measurement and study. A brief expository discussion of process analysis tools is presented in the next section. These tools are basic to implement quality control procedures.

PROCESS ANALYSIS TOOLS

Gaining control over the process is founded on measurement and study. Continual and rapid improvement requires a never ending succession of projects. The project leader often is a machine operator, assembler or individual in charge of a task. The project team zeroes in on a process improvement by using one or more tools of process analysis. Some important tools (Schonberger, p. 126) of process analysis are:

1. Process Flow Chart.
2. Pareto Analysis.
3. Fishbone Chart.
4. Histograms.
5. Run Diagrams and Control Charts.
6. Scatter Diagrams, Correlation, and Design of Experiment.

A brief description of the tools follows if the reader would like more information about one or more of the tools. Excellent references are included at the end of this paper.

PROCESS FLOW CHART (process flow design, route sheets or assembly chart) focuses on the specific processes that raw materials, parts, and subassemblies follow as they move through the plant. Each of these charts is a useful diagnostic tool and can be used to improve operations during the steady state of the productive system. A flow process chart typically uses American Society of Mechanical Engineers (ASME) symbols to denote what happens to the product as it progresses through the productive facility (Chase & Aquilano, p. 69). The process flow chart is used to track the flow of the product through all steps and stages of the manufacturing cycles.

PARETO ANALYSIS can be used to identify the problem in a number of forms (Juan & Gryna, p. 257) and from a frequency distribution determine the types of failures or losses. Though seldom adequate by itself, Pareto Analysis is a convenient and simple method of classifying problems regarding quality or any kind of problem that may occur in the production process. The Pareto principle is based on a well-known observation that 80 percent of the problems will stem from 20 percent of the crises. These failures or losses can be classified into categories and graphed. An example of quality loss frequency distribution is as follows:

About the author:
Gene B. Iverson, Ed.D., is Professor of Production and Director of the Business Placement Bureau, School of Business, The University of South Dakota.

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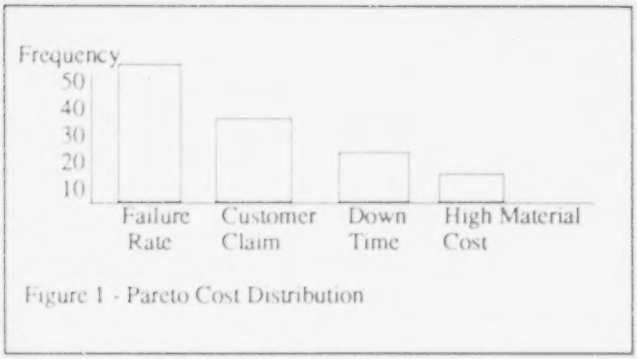


Figure 1 - Pareto Cost Distribution

Disturbances such as defects, machine stoppages, or late deliveries need to be plotted at every point in the process flow: select the worst case (longest bar) for further study. The category that occurs more frequently than the other categories needs the project team's attention first. Continual monitoring of the problem should continue until a satisfactory result is obtained. Monitoring of the problem can be facilitated using control charts.

FISHBONE CHARTS (Cause & Effect Diagram) are procedures for the project group to graphically analyze a problem. The category of main concern (worst case) in the histogram may become the spine of a fishbone chart. For example, if failure rate of a component is the most frequent cause to the contribution of quality cost, then a fishbone diagram may be represented as in Figure 2:

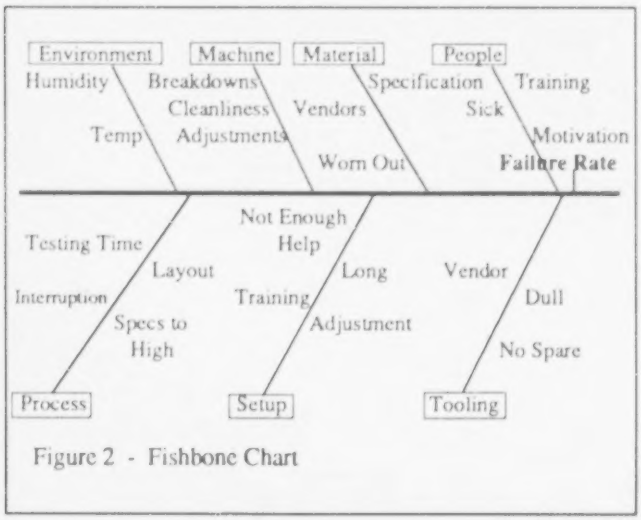


Figure 2 - Fishbone Chart

Secondary causes become secondary bones connected to the spine. Tertiary causes connect to secondary causes. Begin experiments on extremity "bones."

HISTOGRAMS are useful to measure a characteristic of a fishbone diagram. Plotting the measurements or classifying them into categories on graphs allows one to analyze the variation of the characteristic. Understanding and explaining the variation in a process should be the top priority. Understanding the variation will provide clues to causes of problems in a process. The shape of the histogram provides information about the variation of a process and hopefully clues to problem causes.

RUN DIAGRAMS AND CONTROL CHARTS are for analyzing time series data measurements of a process characteristic at random time intervals. Run diagrams chart individual measures where the nominal represents the center line and the top and bottom lines represent a customer's upper specification limit (USL) and lower specification limit (LSL). Any measurement that is above the USL or below the LSL lines is a defective (Figure 3). It makes sense to use a run chart for small lots and for the first fifty or one hundred pieces of a new part number that is made in large quantities. A run chart is used to weed out special causes.

Control charts (Statistical Process Control - SPC) are used to control the process, not to sort out defectives. Control charts use sampling and averages, proportion or ranges of each sample. The discussion in this paper will focus on p-charts, $\bar{x}$ and R charts, but will not include an in-depth statistical theory. The center line and control limits are not specification, but simply refer to the way the process has behaved in the past when in statistical control (Schonberger, p. 130). The p, $\bar{x}$ and R center lines are past averages of the process and the upper control limit (UCL) and lower control limit (LCL) are simply three standard deviations from the center line (Figure 4). If points from the sample are plotted and fall outside the control limits, the process is possibly out of control. The reason may be tool wear, bearing wear, or another problem that may need immediate correction. The problem may also involve too many complaints from customers in a service organization.

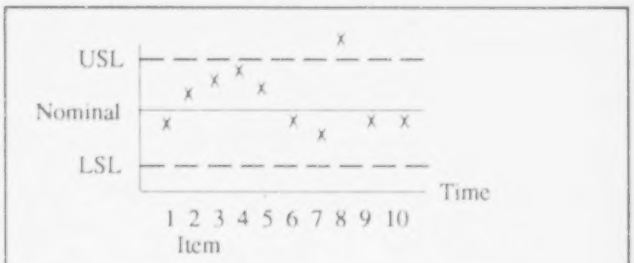


Figure 3 - Run Chart

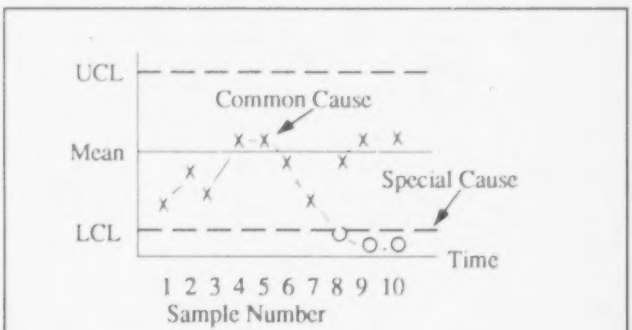
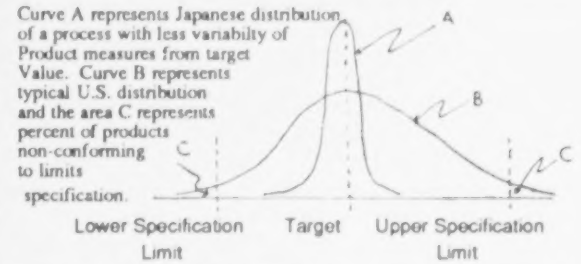


Figure 4 - Control Chart

Variation within the upper and lower control limits is acceptable during operation because it is due to "common causes" which are normal and random. Management effort to improve the process without making changes in the process is called "tampering." Common causes of variation has to do with some of the variables such as: material, machines, people, tooling and technology used in the process. If the means or measurements move outside of these limits, a "special cause" is indicated which requires that the process operation be stopped and corrections made.

All processes in the management, product, or the service chain are subject to continuous improvement. The object is to increase customer satisfaction and to avoid waste in employee time and material, which can reduce product cost and time by one-half and improve quality many fold (Stuelpnagel, p. 7). Improvement is achieved by reducing the amount of variation in the product or process. All processes in a company are involved - management,

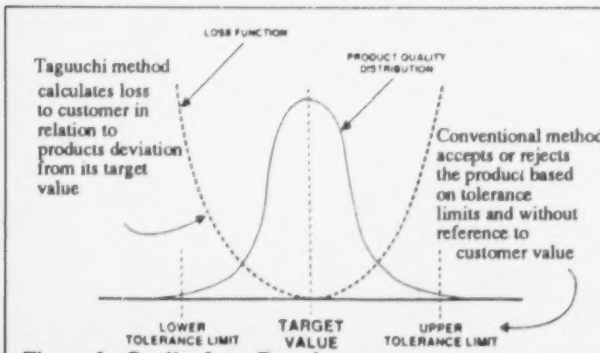
design, production, and product support. The variation of a part dimension, for example, might be improved by refinement of its manufacturing process or by increasing the tolerance for the dimension through test and analysis. A typical comparison of U.S. and Japanese quality standards shows out-of-tolerance parts are reduced by fifty-fold and more parts are produced closer to the target value in Figure 5 (Stuelpnagel, p. 8).


Curve A represents Japanese distribution of a process with less variability of Product measures from target Value. Curve B represents typical U.S. distribution and the area C represents percent of products non-conforming to limits specification.
A
B
C
C
Lower Specification Limit
Target
Upper Specification Limit
Figure 5 - Variabilty Reduction

SCATTER DIAGRAMS, CORRELATION AND EXPERIMENTAL DESIGN tools are procedures management can use to improve the product or process when it is in control. The objective is continual improvement and to increase a company's competitive position. Scatter diagrams are a graphical tool to aid in understanding relationships between two variables. Correlation is a measure of statistical relationships where correlation coefficient (r) is between -1 and 1 ($-1 < r < 1$). In general, the closer the absolute value of r is to 1 the stronger the relationship between the two variables. Statistical significance depends on the size of the sample (degrees of freedom) and the magnitude of r. A detailed discussion of these methods is found in Mendenhall & Reimuth, Business Statistics.

Experimental design procedure allows the investigation of several variables. If the number of variables or factors in a process are too numerous, then factorial design and experimental design methods using orthogonal arrays can be used. These experimental design methods in quality control were made popular by Genichi Taguchi. Some of Taguchi's concepts of robust design have been questioned by some statisticians, but needless to say, Taguchi's contribution to quality has been a significant factor.

Taguchi has developed a quality loss function to couple the product, its manufacturing process, and the customer. The loss function relates the financial loss that a customer would experience due to product failure with the investment the company should make in improving the product to avoid the problem. In Figure 6 the bell shape curve represents the variation in the process. The parabolic (dotted) curve represents the loss sustained when process measurement deviates from the target value.


LOSS FUNCTION
PRODUCT QUALITY DISTRIBUTION
Taguuchi method calculates loss to customer in relation to products deviation from its target value
Conventional method accepts or rejects the product based on tolerance limits and without reference to customer value
LOWER TOLERANCE LIMIT
TARGET VALUE
UPPER TOLERANCE LIMIT
Figure 6 - Quality Loss Function

CHALLENGE

The concepts involving quality are not only for manufacturing; the police department in the city of Madison, Wisconsin implemented a quality program (David Couper). The process is the same for all organizations, but it will be a unique experience because each organization is different. The following are the steps set forward by Deming:

- The leader (CEO) must be committed to quality.
- A leadership group must evolve within the organization that truly understands the quality process. Deming suggests that the "critical mass" of such a group might be the square root of the number of people involved.
- A statistically experienced quality promoter, reporting to the CEO, is needed to assist the organization's managers in organizing, training, and focusing on processes to improve.
- Education process improvements must be started. This is the way the "critical mass" of individuals is built and gain confidence through their individual successes and rewards. In this regard, Deming advises that it really does not make any difference where an organization starts its quality program, just so it starts at once.

Quality control, as a back-to-basics system, requires that individuals understand their work process in depth. Individuals must do their own analysis and their own statistical charts. The Statistical Process Control (SPC) charts should be used and discarded to avoid the trap of too much data. When a chart is used to monitor the process the next day or week, subsequent output from a process will need to be monitored because the process is changing (different raw materials, etc.).

Quality control should be viewed as an opportunity for individuals to become more competent (using a Deming quote, "Working smarter, not harder") and to participate as a team member - to help, to be heard, to be rewarded, and to excel. The ultimate reward a job, a company that is competitive and in the long term, staying in business.

From the service sector Wahlig has defined a quality measure by the formula: Customer Satisfaction equals Perception minus Expectation. If the customer's perception of quality service is greater than the customer's expectations then this leads to satisfied customers. Customer satisfaction is the key to business success. Shores (p. 42) states total quality control has evolved as a management philosophy that links quality to customer satisfaction. It is important for management to implement the philosophies of quality control to direct a firm's future rather than responding to events as they occur. Continuous improvements of products and/or services are possible through implementation of quality control.

J. Michael Cook, Chairman of Deloitte, Haskins & Sells International, states, and is quoted:

> Quality is the only road to fulfilling our mission. Without it, there would be no point in having growth and profitability goals: we would never achieve them. We must therefore continually enhance our service capabilities and reward initiative and excellence. We must strive for and attain the highest standards of performance individually and, more important, as a DH&S client-service team.

Quality control programs are equally important in the health care industry. Manufacturing techniques can be adapted to improve hospital activities (Demos and Demos, p. 85). It is cost-effective to apply quality control programs based on statistical analysis. It allows immediate visibility of problems and immediate communication of these problems and possible solutions.

The challenge for all is to understand the importance of quality systems in manufacturing and service organizations and to implement tools to work toward quality products and service.

Continued on page 12.

SOUTH DAKOTA INCOME AND EMPLOYMENT

TOTAL PERSONAL INCOME
United States, Plains Region and States
First Quarter 1988--First Quarter 1989
(Millions of Dollars, Seasonally Adjusted at Annual Rates)

	1988				1989	% Change
	1st Qtr.	2nd Qtr.	3rd qtr.	4th Qtr.	1st Qtr.	1st Qtr. 1988 1st Qtr. 1989
United States	3,922,767	3,994,017	4,075,042	4,198,095	4,297,169	9.5
Plains States	271,867	274,594	2[illegible]409	279,235	294,782	8.4
Iowa	42,726	41,782	[illegible]1,412	41,576	46,113	7.9
Kansas	38,632	39,867	39,334	40,893	41,675	7.9
Minnesota	71,039	71,395	71,578	73,279	77,519	9.1
Missouri	77,241	78,940	79,973	81,782	84,229	9.0
Nebraska	24,004	24,900	23,921	24,347	25,937	8.1
North Dakota	8,985	8,645	7,711	8,389	9,494	5.7
South Dakota	9,240	9,066	8,480	8,969	9,816	6.2

Note: Detail may not add to totals because of rounding.

Source: U.S. Department of Commerce, Bureau of Economic Analysis.

SOUTH DAKOTA NONAGRICULTURAL WAGE AND SALARY EMPLOYMENT
June 1988 and June 1989
(In Thousands)

				Average Weekly Hours		Average Hourly Earnings	
	Jun. 1988	Jun. 1989	% Change	Jun. 1988	Jun. 1989	Jun. 1988	Jun. 1989
Total Employment	271.7	272.7	0.4				
Total Private	210.0	211.5	0.7	34.6	34.5	$7.18	$7.40
Mining	2.8	2.7	-3.6	42.7	40.2	$12.04	$12.17
Construction	10.8	10.8	0.0	41.6	42.1	$9.62	$9.76
Manufacturing	31.0	30.5	-1.6	42.1	42.5	$7.89	$8.08
Durable Goods	17.4	16.3	-6.3				
Fabricated Metals & Mach.	10.6	9.2	-13.2				
Nondurable Goods	13.6	14.2	4.4				
Food & Kindred Products	7.7	8.0	3.9				
Paper, Printing & Publishing	3.0	2.9	-3.3				
Transportation & Pub. Utilities	13.6	13.6	0.0	39.1	38.5	$10.14	$10.77
Transportation	8.2	8.1	-1.2				
Communication	3.1	3.1	0.0				
Electric/Gas/Sanitary Services	2.3	2.3	0.0				
Wholesale & Retail Trade	70.7	71.7	1.4	32.6	33.1	$6.16	$6.10
Wholesale Trade	17.9	18.2	1.7				
Durable Goods	8.1	8.3	2.5				
Nondurable Goods	9.8	10.0	2.0				
Retail Trade	52.7	53.5	1.5				
Finance, Insurance & Real Estate	14.7	15.2	3.4	35.5	36.2	$7.06	$7.44
Services	66.4	67.0	0.9	31.3	30.5	$6.45	$6.99
Hotels, Amuse., Pers. & Business	20.5	20.1	-2.0				
Medical & Health	24.8	25.7	3.6				
Educational	3.9	4.0	2.6				
Social	4.4	4.6	4.5				
Membership	8.9	8.8	-1.1				
Government	61.7	61.3	-0.6				
Federal	10.9	10.7	-1.8				
State	16.1	15.9	-1.2				
State Education	5.5	5.9	7.3				
Local	34.7	34.7	0.0				
Local Education	19.2	19.2	0.0				

Source: South Dakota Department of Labor

For further information contact Nancy Nelson.

SOUTH DAKOTA AGRICULTURAL INDICATORS

CROP PRODUCTION SUMMARY
SOUTH DAKOTA
August 1989
(1,000'S)

Crop	Unit	Production 1988	1989	1989 as % Of 1988
Wheat, All	Bu.	38,006	82,880	218
Winter	Bu.	21,590	33,600	157
Durum	Bu.	816	2,880	353
Other Spring	Bu.	15,600	46,200	296
Corn, Grain	Bu.	132,000	217,500	165
Sorghum, Grain	Bu.	11,000	13,340	121
Oats	Bu.	20,000	44,400	222
Barley	Bu.	8,100	21,780	269
Soybeans	Bu.	41,520	52,360	126
Hay, All	Tons	3,910	4,100	105
Alfalfa	Tons	2,310	2,420	105
All Other	Tons	1,600	1,680	105

Source: South Dakota Crop & Livestock Reporter

PRICES RECEIVED BY FARMERS FOR COMMODITIES SOLD--SOUTH DAKOTA
June 1988 and 1989

		Base Period Price 1910-1914 Average	June 1988	June 1989	June 1989 Price as % of Base	June 1989 Price Above or Below June 1988
Wheat	Bu.	0.850	3.26	3.86	454	18.4
Corn	Bu.	0.510	2.33	2.36	463	1.3
Oats	Bu.	0.350	2.88	1.74	497	-39.6
Barley	Bu.	0.590	2.99	2.24	380	-25.1
Flaxseed	Bu.	1.680	1/	6.20		
Cattle	Cwt.	5.240	58.90	64.30	1227	9.2
Calves	Cwt.	6.080	88.50	90.20	1484	1.9
Hogs	Cwt.	7.070	46.00	43.60	617	-5.2
Sheep	Cwt.	4.240	23.70	22.20	524	-6.3
Lambs	Cwt.	5.660	59.40	68.30	1207	15.0
Wool	Lb.	0.178	1.43	1.31	736	-8.4

1/ Not published. Insufficient sales.

Source: South Dakota Crop & Livestock Reporter.

SOUTH DAKOTA LOCAL CONDITIONS INDICATORS

SOUTH DAKOTA LOCAL CONDITIONS INDICATORS
(% Change Like Period Previous Yr.)

City	Total	Taxable Sales/1 Retail	Services	Telephone Services/2	Housing Starts/3	Postal Indicator/4	Employment*/2
Aberdeen	0.0	-2.6	5.8	-0.4	-87.0	19.9	-5.8
Belle Fourche	1.8	0.0	7.8	3.0			-0.2
Brookings	7.4	0.1	4.9		68.9	53.7	3.3
Canton	13.4	11.3	-0.6	1.2			6.4
Chamberlain	8.6	6.8	21.1	2.1	722.1		2.3
Deadwood	7.4	3.7	5.9	0.7			4.6
De Smet	0.7	-2.5	17.7	-0.1			-0.3
Elk Point	-0.4	4.0	2.6	2.6			7.2
Hot Springs	-12.9	-4.6	-42.5				-2.3
Huron	4.6	5.8	5.2	0.9	912.5	11.7	0.7
Lead	-12.3	16.7	-5.8	15.3			4.6
Madison	0.8	4.9	-2.6	0.8	79.6		-3.1
Milbank	3.7	8.2	8.9	1.1			0.1
Mitchell	2.3	1.4	10.4	2.5	19.5	4.3	5.8
Mobridge	-0.2	0.1	-4.5	1.3			0.6
Pierre	6.0	9.0	-5.9	3.7	145.2	10.0	-0.8
Rapid City	2.4	1.0	3.0	1.8	-47.9	41.5	1.0
Sioux Falls	5.7	4.8	7.7	2.5	22.0	28.4	0.3
Spearfish	4.4	5.9	6.0		-50.9		4.6
Sturgis	20.0	22.8	4.0	2.6			2.1
Vermillion	2.3	1.4	3.4	1.5	164.0		-1.1
Watertown	6.2	2.4	2.6	3.9	55.1	3.5	3.9
Winner	3.0	5.9	0.2	1.2			2.3
Yankton	3.3	5.3	2.8	4.4	153.2	20.8	6.1

*Based on County Data

1/ Percentage change for Mar.-Apr. 1988 and 1989.

2/ Percentage change for June 1988 and 1989. Telephone data are for the number of access lines in service.

3/ Percentage change for Jan.-June 1988-1989. Data reported for housing represent the value of housing starts.

4/ Percentage change for the 2nd quarter of 1988 and 1989. Included in postal indicators are: postage sales, postage meters for customers, meter imprint postage (3rd class regular), and second class postage.

SOUTH DAKOTA
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CONSUMER PRICE INDEX
United States
Jan.-June 1989
(1982-1984=100)

	Jan.	Feb.	March	April	May	June	Unadjusted % Change Jan.-June
All Items	121.1	121.6	122.3	123.1	123.8	124.1	2.5
Food & beverages	122.0	122.7	123.3	124.0	124.7	124.9	2.4
Food	122.2	122.9	123.5	124.2	124.9	125.0	2.3
Alcoholic beverages	120.3	121.1	121.8	122.3	123.1	123.5	2.7
Housing	120.7	121.1	121.5	121.6	122.1	122.9	1.8
Shelter	129.8	130.3	131.2	131.2	131.8	132.3	1.9
Renters' costs	135.2	136.3	138.6	137.9	137.8	138.7	2.6
Homeowners'cost	134.4	134.7	135.0	135.4	136.2	136.5	1.6
Fuel & other utilities	106.0	105.9	105.9	106.2	107.0	109.2	3.0
Fuels	98.7	98.6	98.5	98.8	99.6	103.2	4.6
Fuel oil, & other household fuel	80.5	81.4	81.5	82.5	81.5	80.2	-0.4
Gas (piped) & electricity	105.1	104.9	104.8	105.0	106.1	110.5	5.1
Other util. & pub. services	125.9	126.0	125.9	126.2	127.0	127.1	1.0
Household furn. & operation	110.9	110.9	110.5	110.7	110.8	111.1	0.2
Apparel & upkeep	115.3	115.3	119.3	120.9	120.4	117.8	2.2
Transportation	111.1	111.6	111.9	114.6	116.0	115.9	4.3
Private transportation	109.8	110.3	110.7	113.6	115.0	114.9	4.6
Public transportation	127.5	128.1	128.2	128.4	128.9	129.6	1.6
Medical care	143.8	145.2	146.1	146.8	147.5	148.5	3.3
Entertainment	123.8	124.3	124.7	125.4	125.5	126.2	1.9
Other goods and services	143.4	144.1	144.4	144.7	145.4	146.3	2.0

*Consumer Price Index for all Urban Consumers

Source: Bureau of Labor Statistics, U.S. Dept. of Labor

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